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【Review】

Endangered Philippine Wildlife Species with Special Reference to the Philippine Eagle *(Pithecophaga Jefferyi)* and Tamaraw *(Bubalus Mindorensis)*

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Abstract

The Philippine is high on the list of priority countries in the world for wildlife conservation because of its remarkable biological diversity, large number of endemic animal and plant species, inadequate wildlife protection measures, and high rate of deforestation. Of the 180 species of mammals in the Philippines, 115 (67%) are endemic. To date, 9 mammals have already been categorized as "endangered" by the International Union for the Conservation of Nature (IUCN). These are the Golden-Crowned Flying Fox, Negros Naked-Backed Fruit Bat, Philippine Tube-Nosed Fruit Bat, Panay Bushy-Tailed Cloud Rat, Ilin-Tailed Cloud Rat, Visayan Warty Pig, Calamian Hog-Deer, Visayan Spotted Deer and Tamaraw.

The tamaraw is a small buffalo found only in the island of Mindoro, south of Manila. It closely resembles the Philippine water buffalo (carabao) except for its massive horns, which grow upward and caudally forming a V. Its population is down to 300 now due to wanton destruction of its habitat and poaching. The Tamaraw Conservation Program (TCP) was established to restore the tamaraw habitat, conduct information and education campaigns, and population and habitat studies. The Philippine eagle is the largest bird of prey in the Philippines and, perhaps, one of the largest in the world. They used to be seen in large number in dipterocarp forests but because of illegal logging, agricultural practices and collection for illegal trade, only around 300 Philippine eagles are left in the country today. The Philippine Raptors Conservation Program (PRCP), Center for Philippine Raptors (CPR) and the Philippine Eagle Conservation Foundation, Inc. (PECFI) were established to protect the Philippine eagle and other endangered birds of prey and their habitats.

1. Introduction

The Philippines, composed of 7,101 islands, lies in the heart of Southeast Asia with the vast Pacific Ocean on the west and South China Sea on the east. It is blessed with rich natural resources such as rare plants and animals found nowhere else in the world. However, it disheartening to note also that no

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country in the world has its plants and animals being destroyed at an alarming rate than the Philippines. For instance, the Philippines has already lost about 97% of its original vegetation and has even more critically endangered avian and mammalian species than any other country (Tacio, 2000). For this, the Philippines has been tagged one of the "hot spots" in the world for conservation concern. Other reasons are the (1) remarkable biodiversity of animal and plant species in the country, (2) extraordinarily high percentage of endemicity among the species wherein some 67% of these species are present only in the Philippines and, (3) high rate of deforestation and other forms of habitat destruction (Oliver and Heany, 1997). To these a fourth reason can be added and that is the apparent lack of political will to enforce existing laws to safeguard wildlife species and their habitat. Countless national and local legislation have been passed to protect wildlife and their habitat but unfortunately they seemed to be ignored rather than followed. As a result deforestation and hunting continue at an alarming rate. The biodiversity of the Philippine islands is exceptionally rich as shown by its 556 avian species, 172 (44%) of which are endemic, 180 mammalian species, 115 (67%) of which are endemic, and 293 reptilian and amphibian species, 214 (73%) of which are endemic (Oliver and Heany, 1997). The Philippines ranks fourth in the world with the highest number of threatened species totaling 384. Malaysia is first with 804, Indonesia second with 763, and India third with 459 species. It is interesting to note that these are all Asian countries. In the 1994 Review of the Distribution and Conservation Status of the Birds of the World by the Birdlife International, the Philippines topped the list of countries in terms of the number of critically endangered endemic bird species, and second after Brazil for the number of most threatened bird species under endangered and critically endangered categories. Its national bird, the Philippine eagle and national animal, the tamaraw are likewise seriously threatened with extinction. The rainforests homes to most of the wildlife species are also fast disappearing giving way to agricultural expansion and urbanization.

2. Endangered Wildlife Species in the Philippines

What are endangered species? According to the definition given by the International Union for the Conservation of Nature and Natural Resources (IUCN), endangered species are plants or animals that are being threatened with extinction due to excessive hunting and large scale destruction of their habitat. Conservationists all over the world are alarmed by the 1996 Report of the International Union for IUCN stating that the number of critically endangered mammals in the world has increased significantly from 169-180, primates from 13-19, fresh water turtles from 10-24, and birds from 168-182. Of the list for endangered mammalian species, nine are endemic to the Philippine islands. These are the Golden-crowned flying fox, Negros naked-backed fruit bat, Philippine tube-nosed fruit bat, Panay bushy-tailed cloud rat, Ilin hairy-tailed cloud rat, Visayan warty pig, Calamian hog deer, Visayan spotted deer, and tamaraw. Among the critically endangered avian species in the report is the Philippine eagle. Although no endangered marine mammals were mentioned in the report, whale sharks are fast disappearing from Philippine waters (Esplanada, 2000). For example, the *Rhicodon typus* (also known as *pating patola* in Zambales, *toko* in Mindoro, *balilan* in Cebu and Bohol and *butanding* in Bicol and Palawan), which regularly visits the waters of Donsol, Sorsogon (located at the tip of Bicol Peninsula) from November to May are rarely sighted in Philippine waters now. These gentle, polka dotted whale sharks are widely hunted by local fishermen for its meat and fins, which are reported to command a high price abroad. To prevent the *Richodon typus* from completely disappearing from the Philippine waters, the Philippine government in 1998 declared the whale shark endangered; thus, banning poaching and exporting of its

meat, which is a delicacy in some Asian countries. Other non-governmental conservation groups such as the World Wildlife Fund Philippines (*Kabang Kalikasan ng Pilipinas*) and large business conglomerates like Nokia Philippines, Megaworld Corporation and International Container Terminal Services Incorporated have supported the government's campaign to protect the whale shark. The Philippine Daily Inquirer a leading Philippine newspaper also supports the save the whale shark campaign. Other endangered Philippine species are the Hawksbill turtle (*Eretmochelys imbricata*), Olive Ridley turtle (*Lepidochelys olivacea*), Leatherback turtle (*Dermochyles coriacea*), Philippine crocodile also known as Philippine freshwater crocodile and Mindoro crocodile (*Crocodylus mindorensis*), Indo-Pacific crocodile or salt water crocodile (*Crocodylus porosus*), Mindoro bleeding heart (*Gallicolumba platenae*), Mindoro bleeding heart (*Ducula mindorensis*), lesser eagle owl (*Mimizuki gurneyi*), Philippine eagle owl (*Bubo philippensis*), silvery kingfisher (*Alcedo argentata*), Mindoro hornbill (*Penelopides mindorensis*), celestial monarch (*Hypothymis coelestis*) and Isabela oriole (*Oriolus isabellae*). The Philippines - Japan Crocodile Farming Institute (CFI) based in Palawan Island has successfully bred the *Crocodylus mindorensis* in captivity. Only the endangered terrestial mammals (cloud rats, fruit bats, deers, wild pig and tamaraw) and the Philippine eagle will be described in this paper.

2.1 Cloud Rats

Cloud rats are gentle and lovely rodents found only in the Philippine. Six species of cloud rats inhabit the Philippine. These are the Northern Luzon slender-tailed cloud rat (*Phloeomys pallidus*), Southern Luzon slender-tailed cloud rat (*Phloeomys cumingi*), giant bushy-tailed cloud rat (*Crateromys schadenbergi*), Ilin Island cloud rat (*Crateromys paulus*), Dinagat Island cloud rat (*Crateromys australis*) and Panay Island bushy-tailed cloud rat (*Crateromys heaneyi*). The Panay bushy-tailed cloud rat and the Ilin-hairy tailed cloud rat are extremely endangered while the Ilin hairy-tailed cloud rat found only in the Ilin Island south of Mindoro is on the verge of extinction. Others claim it is already extinct. The smallest is the *Crateromys paulus.* The *Phloeomys cumingi* and *Phloeomys pallidus* are still off the endangered list because there is still a healthy population of these species in the wild. Unlike their parasite and disease carrying cousin rats in urban places, cloud rats are forest dwellers. They are slow moving creatures but are excellent tree climbers. Cloud rats are nocturnal creatures spending most of the day sleeping in the hole of large trees. Their diet is simple consisting mostly of tender young leaves, bananas, guavas, and young corns (Novak, 1999). Survival of cloud rats is threatened by hunting and wide scale deforestation. Cloud rats are usually hunted for their meat, which is a favorite finger food or *pulutan* during drinking session in rural areas. Others keep them as pets. Cloud rats are among the wildlife species protected by the Haribon Foundation for the Conservation of Natural Resources a member of the World Conservation Union with linkages with a number of conservation groups nationally and internationally. Basic studies on the biology and health aspects of cloud rats should be encouraged to complement various on-going conservation measures. In the Philippines, Maala and Arreola (1996) described the hair cuticles of the cloud rat from those of flying lemur and Philippine monkey by means of scanning electron microscopy. Based on the result of their study the three species could be differentiated from each other through the cuticular patterns of their hair. A study on the anatomy of the cloud rat is presently undertaken at the Institute of Biological Sciences, University of the Philippines Los Banos.

2.2 Flying Foxes

Flying foxes or fruit bats are forest dwellers, which subsist mainly on forest fruits. They are known

locally by various names such as *paniki, kabag and bayakan*. Eight species of large flying foxes have been documented in the Philippines. Of these, the Golden-crowned flying fox (*Acedoron jubatus*) and the Philippine tube-nosed fruit bat (*Nyctimene rabori*) are considered endangered, and the Negros naked-backed fruit bat (*Dobsonia chapmani*) extinct. The *Acedoron jubatus* is the largest bat in the world weighing almost 1.1 kg (Heaney and Heideman, 1987). Deforestation and extensive hunting and collection have largely depleted their population. In the late 1800s and early 1900s one readily encounters colonies of Golden-crowned flying fox numbering 100,000 individuals per colony but nowadays bat colonies of that size are hard to find. Colony size has dwindled to 5,000 bats per colony. Fruit bats are usually hunted for food and as pets. Because of prevailing poverty in rural areas exotic food such as bat meats are cheap source of animal protein in the diet. Fruit bats are also favorite finger foods or *pulutan* among rural folks during drinking sessions. Selling fruit bats is also a source of additional income for the people. In some parts of the country, skinned or live fruit bats are sold openly in public markets. Even in other countries such as the Pacific Islands, fruit bats are considered a delicacy. For example the Chammoro people of Marianas Islands consider fruit bat the most important of the local delicacies and is always served during special occasions (Payne, 1984). There is also a demand for bats as sources of ingredients of traditional medicine and aphrodisiacs. According to Morgan (2000), folk medicines such as the traditional Chinese medicine are endangering the survival of a growing number of wild animals and plants. The traditional Chinese medicine alone has been reported to be worth $ 6 B to $ 20 B. Derivatives of wildlife species are not only used in traditional medicine but are also used as raw ingredients in the preparation of modern medicine. The extinction of the Negros naked-backed fruit bat has been blamed to guano mining, hunting and forest destruction. (Heaney, 1997). The relationship between fruit bats and forest is a symbiotic one that is they protect each other. Bats are economically beneficial animals in pollination of fruit trees, dispersal of seeds of fruit and forest trees, and as a source of guano fertilizer. As seed dispersers, Tuttle (1983) cited a recent West African study, which showed that bats are more effective seed dispersers than birds. A more effective conservation measures could be implemented if basic information such as reproductive physiology and health management aspects of this species are understood. However, there are only few studies conducted on Philippine bats. These included the work by Guico and Maala (1994) on the histological and histochemical description of the fundic gland region of the stomach of insectivorous *Hipposideros diadema* bat and frugivorous *Rousettus amplexicaudatus* bat. In Japan, Yamada et al. (1988) reported the presence of cholycystokinin, gastric inhibitory peptide, motilin, neurotensin and bovine pancreatic polypeptide immunoreactive cells in the stomach of two species of insectivorous vespertilinid bats. In a study on five North and Central American bats, Rouk and Glass (1970) reported that the stomach of *T. brasiliensis*, N. *velifer* and *A. pallidus* do not differ histologically from each other. They observed however that there are only a few chief cells in the stomach of L. *sanborni*.

2.3 Visayan Spotted Deer, Visayan Deer (*Cervus alfredi*)

There are three species of Philippine deer: Visayan spotted deer, Calamian hog deer and Philippine brown deer (*Cervus marianus*). Only the Visayan spotted deer and the Calamian hog deer are presently threatened. Few heads of Visayan spotted deers are still found in the remaining forests of Negros and Panay islands. They were previously reported in Cebu, Guimaras and Masbate Islands but excessive hunting and deforestation lead to their extinction in these places. The Visayan spotted deer is a small, attractive animal measuring about 80 cm tall at the shoulder. Their characteristic white spots remain

throughout their life. The Visayan spotted deers are the most endangered deer in the world. They are listed in the Appendix I of the Convention on International Trade of Endangered Species (CITES), which means that trade of Visayan spotted deer is strictly regulated by law. It is believed that there only about 200 heads of Visayan spotted deer in the wild today. It is seriously threatened with extinction unless illegal hunting and rampant degradation of their habitat are stopped. Conservation measures that have been adopted included the International Philippine Spotted Deer Conservation Program a joint venture between the Philippine Department of Environment and Natural Resources (DENR) and the *French Parc Zoologique et Botanique De La Ville De Mulhouse* (PZBM) (Oliver, 1996). There were two components of the program: establishment of a new national park in Panay and the setting up of captive breeding and rescue centers. The Philippine Wildlife Loan Agreement (PLWA) signed in 1987 by DENR and Mulhouse Zoo implemented these. Under this agreement West Berlin Zoological Society would provide financial assistance for faunal survey and preliminary management plan for the proposed Panay Mountains National Park. In 1990, the captive breeding component of the Philippine Spotted Deer Conservation Project was realized with the launching of the Philippine Spotted Deer Captive Program. Mulhouse Zoo and the Zoological Society of San Diego funded the project. Two breeding and rescue centers were initially established, one in Bitu Farm, Iloilo specifically for spotted deers of Panay origin and the other one in Siliman University, Negros Occidental for spotted deers of Negros origin. A third breeding center was later on put up in Bacolod, Negros Occidental. The ultimate aim of the breeding centers was to establish a "world herd" of Visayan spotted deers. The initial population in these centers was composed of Visayan spotted deers donated by private persons who keep these animals as pets and also those caught from the wild. In 1995, DENR and Melbourne Zoo signed an agreement to establish a Philippine spotted deer Conservation Center for Panay Island population of the deer. This agreement was enlarged in 1998 to include the White Oak Conservation Center in Florida. Under this agreement, Melbourne Zoo, which provides financial support to the program, will receive a group of Philippine spotted deer in 2000 to start a regional Australasian zoo program. Incidentally, the Negros Forest and Ecological Foundation, Inc. (NFEFI) reported the birth of the first captive bred spotted deer fawn on November 20, 1996 at its Conservation Center in Bacolod. Research on basic nutritional requirements and reproductive physiology of the Philippine spotted deer should be encouraged to complement various conservation measures. Blood values, blood clotting time, respiratory rate, pulse rate and temperature important in disease diagnosis should be established in this species. Maala and Saguibo (1997) who examined the cuticular patterns of the hairs of Calamian deer, Visayan spotted deer and mouse deer by means of scanning electron microscopy claimed that it is possible to distinguish the Visayan spotted deer from the Calamian deer through the cuticular patterns of their hairs.

2.4 Calamian Deer, Calamian Hog Deer, Philippine Deer *(Cervus porcinus calamianensis, Axis calamianensis)*

The Calamian deer is endemic in Busuanga, Calauit and Culion (group of islands at the northern tip of Palawan) islands. It is known locally as *usa*. Since Calamian deers are listed in Appendix I of CITES, their trade is subject to strict regulation. The Calamian deer is a beautiful animal, which is tawny brown in the head, lateral side of the neck and on the ventral side of the body. Its tail is characteristically short with white buffs of hair present on the ventral side of the tip. A 70-80 cm tall adult Calamian deer weighs 30-35 kg while a newborn weighs about 1 kg. Only male Calamian deers have antlers. Calamian deers are largely threatened by shrinking habitat and illegal hunting and collection. Rural folks fancy the

meat of Calamian deer resulting in their over hunting. In 1976, a Presidential Proclamation was signed by then President Marcos establishing the Calauit Island Game Reserve and Wildlife Sanctuary, which were thought to protect the wildlife species in this island. However, it turned out that the sanctuary was not intended to provide haven to the native animals there but instead to accommodate the African wildlife species donated by the Kenyan government to Marcos. Contrary to the belief that the introduction of alien species of animals into a certain place can have long term negative effects on native animals (Janetos, 1997), the Calamian deers and other wildlife species survived despite the presence of the African species. In fact, the population of the Calamian deer increased dramatically from 35 in 1977 to about 550 in 1991 (Panol, F. W., 1986). Other Calamian deer conservation measures included the international cooperative breeding program established by an agreement between DENR and the Zoological Society of San Diego (Oliver, 1996). The Zoological Society of San Diego provided financial support to the project. The Calauit Island Game Reserve and Wildlife Sanctuary is threatened by the residents who have returned to the Calauit Island to reclaim their lands when Marcos was toppled from power in 1987. These people were displaced from their lands when the wildlife sanctuary was established in 1976. When they returned to the island they brought with them animals, which may serve as reservoir of infectious diseases that endanger not only the Calamian deers in the area but also other wildlife species. It is surprising to note that not much basic information about the Calamian deers is available in the literature. For example the hematology, temperature and respiratory and pulse rates important in disease diagnosis are not yet established in this species. Studies along these lines should therefore be encouraged. The skull (Maala et al., 1990) and vertebral column (Maala et al., 1992) of the Calamian deer have been described. Some external and gastro-intestinal parasites such as *Damalinia sp.*, *Strongyloides sp.*, *Oesophagostomum sp.*, *Bunostomum sp*. and *Monieza sp*. have been identified in Calamian deers (Eduardo et al., 1991; Eduardo, 1995).

2.5 Visayan Warty Pig *(Sus cebifrons)*

There are three species of Philippine wild pigs: Visayan warty pig, bearded pig (*Sus barbatus*) and Philippine warty pig (*Sus philippensis*). However, only the Visayan warty pig is considered endangered by the IUCN. Visayan warty pigs are endemic to the islands of Cebu, Guimaras and Masbate, although recent reports show that they are now extinct in Cebu and Guimaras. The Visayan warty pig is a small, forest-dwelling pig. In general, boars are larger than sows. Their snout is elongated, mobile and terminates in an expanded flat disk, the snout. The head is elongated and bears the well-developed upper and lower canines. They are usually black in color with an abundant mixture of silvery white bristles on the sides producing a general whitening effect on these parts. In young pigs there is an orange band running along the length of the body, which disappears at about 7 - 8 months of age. The wild pig is described in a more detailed manner by Rabor (1977). The animal's diet includes vegetables and fallen fruits. Threats to these animals include intense hunting and systematic destruction of their habitat such as illegal logging and spread of agriculture (Oliver, 1996). The main reason Visayan warty pigs are excessively hunted is their meat, which is fancied by rural folks. The meat of Visayan warty pigs is also popular among the health conscious people because of its low fat and cholesterol content. The sad plight of these animals is made worse by the negative attitude of local folks towards them because of their destructive nature. Food shortage in the forest forced these animals to migrate into lowland areas attacking agricultural crops like vegetables and corns. As a result, farmers regard them as pests and start hunting them with impunity. Conservation measures aimed at saving the remaining herd of Visayan warty pigs from

extinction are similar with those adopted for the Visayan spotted deer because both share the same habitat. A captive breeding center has been set up at Siliman University, Negros Oriental by virtue of an agreement between DENR and the Zoological Society of San Diego. It is stipulated in the agreement that should the project become successful, animals for breeding purposes will be loaned out to other breeding centers locally and internationally. The Negros Forest and Ecological Foundation, Inc. (NFEFI) a non-government conservation group established in 1986 is involved in the conservation of threatened endemic species and their habitats in Negros Island. It receives financial assistance from Melbourne Zoo and Rotterdam Zoological Society. In addition to the maintenance of a captive breeding facility, NFEFI conducts community educational program, and reforestation activities of the Bacolod hills. It is unfortunate that the animal, although on the extremely endangered list, has attracted very few studies. Since wild pigs are now raised in captivity basic information on their reproductive physiology, nutrition, and basic physiological information such as blood values, normal body temperature, and respiratory rate should be established. The last three are vital information in routine clinical examination. Among the studies conducted on wild pigs are those of Valle et al., (1998), which characterized the hair cuticles from different body regions of native pigs *Sus philippinensis* and a wild pig *Sus barbatus and* De Asis (1998), which compared the microscopic anatomy of the carpal of wild and native pigs. Valle et al. showed some differences in the hair cuticular patterns between *Sus philippinensis* and *Sus barbatus* that could be used to differentiate the two species. De Asis observed that the carpal gland, which is peculiar to porcine species, is more developed in *Sus barbatus* than in the *Sus philippinensis*. The pheromone-like secretion of the carpal gland is important for territorial marking. Recently, Corbe (2000) identified ticks, louse and a species of acanthocephalan worm from a captive wild pig *Sus philippensis*. Similar works have not been done on Visayan warty pigs.

2.6 Philippine Eagle, Great Philippine Eagle (*Pithecophaga jefferyi*)

The Philippine eagle (Figure 1) is the largest bird of prey in the Philippines and considered the second rarest and largest in the world (Molinyawe et al., 1999). It is declared as the Philippine national bird in 1995. It is known locally as *agila, manaol, tipule, mamboogook, malamboogook* and *garuda*. The Philippine eagle is formerly known as Philippine monkey-eating eagle because of the wrong belief that it feeds only on monkeys. However, it has been found that its diet also includes other forest dwellers such as flying lemurs, squirrels, snakes, bats, deer, monitor lizard, young owl, young pig, and in captivity, the eagle also eats guinea pigs, rabbits, goat meats, beef and even chicken. The eagle has a black, narrow, 26 cm-arched bills, enormous black claws; generally, dark brown in color (in adult), partly feathered legs, and scaled lower legs (Grossman and Hamlet, 1964; Rabor, 1971). Its eyes are blue gray, the cere around the nostrils is blue green, and the head is surrounded by crest of long pale rufous feathers. It measures about one meter tall, 95 cm long and weighs approximately 4 kg. It has 6.5 ft wingspan. The Philippine eagle builds its nest on top of very tall trees and nests once every two years. Only one egg is laid, which is alternately incubated by both parents for a period of 60-61 days. The eaglet remains in the nest for about five and a half months. The breeding season ranges from as early as August to as late as January (Rabor 1971).

2.6.1 Distributions and Population

John Whitehead first reported the Philippine eagle in Samar Island in 1896 (Molinyawe et al., 1999). It is claimed that the eagle occurs only in Luzon, Samar, Leyte and Mindanao (Kennedy, 1977; Rabor, 1971). However, based on forest cover analysis and reports of additional sightings, Jensen et al., (1991) concluded that there is still a wild population of Philippine eagle in the Sierra Madre Mountain Range in eastern Luzon. Recent reports of sighting of Philippine eagle included those in the provinces of Cagayan, Isabela, Aurora and Eastern Samar (Labro, 1998). The Philippine eagle is listed under critically endangered by IUCN so that law strictly prohibits hunting and trade of this bird. The Philippine eagle population has dwindled to a dangerously level over the years. For example, forty years ago, the population of the Philippine eagle was estimated to be 6,000, but according to Ellis (1972) the population is fewer than 100. The Philippine Red Data Book published by the Wildlife Conservation Society of the Philippines in 1997 placed the population of Philippine eagle at approximately 200. Recent report from DENR showed that the present population of the Philippine eagle including those in captivity is 117 (Molinyawe et al., 1999).

Figure 1 An adult Philippine eagle (Taken from The Treasury of Birds Published in 1972 by Octopus Books Ltd., London).

2.6.2 Philippine Eagle Conservation Measures

The sad plight of the Philippine eagle was first brought to the attention of the world during the 1965 IUCN Conference held in Bangkok, Thailand. As a result, the Philippine Eagle Center now the Center for Philippine Raptors (CPR) was established (Molinyawe et al., 1999). It is based at Makiling Botanical Garden, University of the Philippine Los Banos, Laguna. It is mandated to conduct scientific researches, restore habitats, monitor and protect populations, conduct educational, and information campaigns for the protection of the eagle and its habitat. Captive breeding center has been established in Mindanao in support with the activities of the center. So far, five Philippine eagles have been successfully bred in captivity: *Pag-asa* (hope), *Pagkakaisa* (unity), *Pangarap* (dream), and *Bayani* (hero). In addition to the routine population survey and habitat studies, the basic nutritional requirements and reproductive physiology of the Philippine eagle in captivity should also be investigated. Various legislations have been enacted to further protect the Philippine

eagle and its habitats. These include Administrative Order 235 (1970) prohibiting the wounding, hunting, trading and killing of the eagle, Republic Act 6147 (1970) declaring the Philippine eagle as a protected bird in the Philippines, Parks and Wildlife General Administrative Order 1 (1971) establishing rules and regulations governing the preservation of the eagle, Proclamation 1732 (1978) changing the name "monkey-eating eagle" into Philippine eagle, Republic Act 7586 (1992) providing for the establishment and management of National Integrated Protected Areas System including known habitats of the Philippine eagle, Proclamation 615 (1995) declaring the Philippine eagle as the Philippine national bird (some critics argued the wisdom of naming an endangered species as a national symbol), and lastly Proclamation 79 (1999) declaring June 4-10 of every year as Philippine eagle week.

2.6.3 Threats to the Philippine Eagle

Destruction of dipterocarp forests the known habitat of the Philippine eagle is by far the most serious threat to the survival of the Philippine eagle. The Philippine dipterocarp forests are populated by broadleafed dipterocarp tree species that include red and white *lauan, tanguile, tiaong, almon, bagtikan and mayapis* of the Philippine mahogany species. The Philippine deforestation rate, which was reported to be 91,000 ha a year is considered high among the Southeast Asian countries (Matsuoka, 1998). With this rate of deforestation, it is projected that the Philippine forest will be completely denuded by the year 2036. Tabaranza, Jr. (1997) stated that most of the Philippine endemic birds except the Philippine duck *Anas luzonica* are forest dependent, and the alarming rate of on going forest destruction should be a major concern to prevent the global extinction of endemic birds. The Philippine eagle and its mate require 50 - 100 sq km territory and a home range of some 30 sq km within which no other similar eagle must nest (Labro, 1998). Protecting the habitat of the Philippine eagle therefore will result in saving a significant amount of the remaining tropical rain forest in the Philippines (Tabaranza, J., 1997). Another equally important threat to the Philippine eagle is illegal hunting. It is a known fact that Philippine eagles are usually hunted as pets. Some found their way into local and foreign zoos. The eagle is listed in Appendix I of CITES, so that law strictly prohibits trade of this bird. According to Ellis (1972) it is a status among Filipinos to possess a stuffed, mounted eagle. It is however unthinkable to hunt Philippine eagle just to have it stuffed. Maybe Ellis is referring to other Philippine raptors such as the smaller Philippine hawk-eagle (*Spizaetus philippensis*) that are not yet presently threatened.

2.7 Philippine Tamaraw (*Bubalus mindorensis*)

The tamaraw (*tamarao, tamarau, timarau*) (Figure 2) is found only in Mindoro Island, south of Manila. It closely resembles the highland *Bubalus anoa depressicornis* and the lowland *Bubalus anoa quarlesi* of Indonesia. Maybe this explains why the tamaraw is previously called *Bubalus arnee mindorensis* and *Anoa mindorensis*. Tamaraws are fierce, nocturnal and wary animals. Most of the time, they are observed occurring individually or found in small groups. In contrast with other animals, tamaraws conceal their calves rather than being with them constantly in the open. When provoked, they bring their heads down and shake them laterally. There are no records on the domestication of tamaraws but some claim that they could be trained into valuable domestic animals. However, their diminutive size may not be ideal for farm tillage. Tamaraws are not choosy with their diet. In fact, its diet consists mainly of new growth of *Saccharum spontaneoum, Imperata cylindrica* or "cogon" grass and even bamboo shoots that are quite abundant in the area. Just like the carabao, the tamaraw requires adequate supply of water for drinking and wallowing so that during summer they were observed to travel to lower areas in

Figure 2 An adult Tamaraw bull at the "gene pool" in Mindoro Island.

search of water. With regards to wallowing behavior Momongan et al., (1996) reported that tamaraws wallow more during the day than at night and during rainy season compared to the dry season. Their observations were based on tamaraws in confinement.

2.7.1 Physical Description of Tamaraw

The tamaraw closely resembles the Philippine swamp buffalo or carabao (*Bubalus bubalis*) in all aspects except that it is much smaller physically. It measures only a meter tall at the shoulder and weighs roughly 300 kg. Because of this, the tamaraw is also known as "miniature carabao" or "dwarf carabao". A striking feature of tamaraws is their short massive horns, which are triangular on cross section and curve straight caudally forming a "V", whereas in carabaos the horns are directed laterally and caudally forming a "C" (Walker et al. 1975). The haircoat of adult tamaraw is dark brown to grayish black in both sexes. Newly born calves, however, are reddish brown in color but it changes to adult color when the animal reaches 5 years of age (Kuehn, 1976). Change in haircoat color and shape of the horns could be used in the estimation of the age of tamaraws (Kuehn, 1986). Tamaraws have short and stocky legs, more hairs in the body and short external ears. The skeletal system of the tamaraw has already been adequately studied (Sumulong, 1931; Maala and Momongan, 1993). The other body systems have yet to be described.

2.7.2 Habitat

Tamaraws used to roam in open pasture, dense bamboo vegetation, marshy river valleys and upland forests in Mindoro Island but because of pressures from hunting and shrinking habitat, the animals defensively retreated to forested areas (Kuehn, 1986). Cox and Woodford (1990) described the physical features and vegetation prevailing in Mt. Iglit-Baco National Park, one of the tamaraw conservation areas. The Mt. Iglit-Baco National Park is a 75,500 ha area located in a mountainous terrain in the central region of Mindoro. The vegetation of the western part of the park is dominated by botanical species such as *Themedia triandra, Saccharum spontaneoum and Imperata cylindrica*. There are also small areas with mixed bamboo and secondary forest growths. The vegetation along rivers is dense and this

provides good pasture and cover to the tamaraws. The eastern side of the park that receives adequate rainfall throughout the year favors the growth of tropical rainforest.

2.7.3 Threats to the Tamaraw Population

The tamaraw is listed in Appendix I of CITES which means that the population of this animal has reached an alarmingly low level; thus, poaching and trade of tamaraws are strictly prohibited. It is one of the Philippine mammalian species facing extinction unless the causal factors are eliminated. Harrisson (1969) reported that the population of tamaraw dropped from a high of 10,000 in 1900 to just 100 heads in 1969. Lustria and Callo (1992) reported that there are still about 133 tamaraws in the wild. DENR claimed that the population of the tamaraw has increased to 300. As to the sharp decline in the population of tamaraw from 1900 to 1949, this was attributed to the outbreak of rinderpest in the Philippines in 1930. Rinderpest, which was introduced into Africa 100 years ago, was responsible for the eradication of millions of wilderbeests, hartebeests and others in that continent. Among the threats to the remaining tamaraw population, include the continuous destruction of their habitat by human settlers in the tamaraw reservation areas. One such activity is cattle ranching near the Mangyan Heritage Park, which has resulted in the destruction in large proportion of the tamaraw's remaining habitat. Cox and Woodford (1990) have reported that about 14 pasture permits (the number could have easily doubled now) covering approximately 6,616 ha of the Mangyan Heritage Park have been issued by the Philippine government for commercial cattle ranching. Burning, a common practice by cattle ranchers especially during summer resulted in the appearance of less suitable and palatable botanical growth such as *Imperata cylindrica*. One cannot also discount the possibility of diseases and parasites being introduced into the area by cattle ranching. In fact, gastro-intestinal tract parasites such as *strongyles, fasciola, amphistomes and trichuris sp*. normally present in cattle have already been reported in captive tamaraws (Anunciado et al., 1996). Even external parasites such as *Hematopinus tuberculatus* (louse), *Boophilus microplus* (tick), *Rhipicephalus sanguineus* (tick) and *Amblyoma sp*. (tick) have likewise been observed in these animals (Masangkay et al., 1996). Two tamaraws in their report were seropositive to *Leptospira sp*. and one animal reacted positively to bluetongue virus and leptospira.

There is no doubt that human encroachment on the Mangyan Heritage Park is by far the most serious threat to the tamaraw. Cox and Woodford (1990) reported that 2000 people have already illegally occupied a vast area in the southwestern part of the Mangyan Heritage Park. With the population of Filipinos expected to break the 80 million mark this century, human squatting even in wildlife reserve areas will continue at a faster rate. There is also the likelihood of outbreaks of highly infectious diseases of livestock such as foot and mouth disease (FMD), hemorrhagic septicemia (hemosep), tuberculosis, brucellosis (contagious abortion) and rinderpest (although this has already been eradicated in the country) in reservation areas as a result of squatting. Ross McPhee of the American Museum of Natural History in New York theorized that diseases introduced by human being are responsible for the disappearance form the earth of more that 100 species such as the mammoths, mastodons, giant armadillos, dog-size rodents and saber-toothed tigers (McKie, 2002).

Hunting definitely poses a serious threat to the remaining tamaraw in the wild. Among the people who have been known to engage in poaching are the indigenous people in the Mangyan Heritage Park, cattle ranchers, human settlers and sportsmen. It is doubtful, however, whether the indigenous people

living in the park actually hunt tamaraw. Of course, they are known to hunt wild pigs, wild deers and sometimes fruit bats for food but to kill tamaraws is yet to be proven. Because they are armed with deadly bolos and spears Cox and Woodford (1990) believe that these people will not hesitate to kill a tamaraw when the opportunity is there. It is true that skeletal remains believed to be those of tamaraws have been found in the park, but these specimens could belong to tamaraws that have died from natural causes. There are also unconfirmed reports of smuggling of tamaraws out of the country. Adult tamaraws could be declared as young carabaos because of their resemblance.

2.7.4 Conservation Measures

Judging from the number of conservation efforts, the tamaraw appeared one of the most protected wildlife species in the Philippines. However, despite the number of legislations that have been enacted to protect the tamaraw and its habitat the tamaraw population remained alarmingly low. Records show that as early as 1920 the F. B. Harrison Game Refuge and Bird Sanctuary and the Mt. Calavite Game Reserve have been declared tamaraw conservation areas. In 1936, the Commonwealth Act 73 was passed banning the killing, wounding or taking away tamaraws. Penalties for violation of this act include six months imprisonment or a fine of not less than 600 pesos (The present Republic Act 7586 or the National Integrated Protected Areas System Act of 1992 has increased the penalties to 50,000 pesos fine or one to six years imprisonment). The government established in 1960 a third tamaraw conservation area adjacent Mt. Iglit, which was later on linked with Baco Reserve to constitute the Mt. Iglit-Baco National Park. The latter was subsequently declared an Asean Heritage Park in 1982 (Petocz as cited by Cox and Woodford, 1990). In 1992, the Mt. Iglit-Baco National Park in consideration with the Mangyan indigenous tribe living near the park was renamed Mangyan Heritage Park (Oliver, 1993). The Tamaraw Conservation Program (TCP) was established in 1979 to safeguard the tamaraw and its habitat, establish a gene pool, conduct population and habitat surveys, undertake reforestation programs, and embark on information and educational campaigns about the need to protect the tamaraw and its habitat. Several various government and private organizations have managed TCP such as the Presidential Commission for the Conservation of the Tamaraw (PCCI), Conservation Resource Management Foundation (CRMF), Carabao Research and Development Center (CRDC) and the Park and Animal Welfare Bureau (PAWB) of DENR. DENR Region IV presently manages TCP. According to the report by Cox and Woodford (1990), TCP has failed in its mission to provide adequate protection to the tamaraw and to generate significant number of research studies. The population of the tamaraw remained low and only a dismal number of research studies have been accomplished. One reason for these could be the frequent changes in the management of TCP (Cox and Woodford, 1990). There was even a strong objection on the use of the tamaraws in the gene pool for experimental research purposes such as those involving artificial reproductive techniques (Dee at al., 1996). However, the Nagoya University and University of the Philippine Los Banos signed a memorandum of agreement to conduct genetic studies on the tamaraw. Among the research outputs from this agreement were:

- External characters and karyotypes of captive tamaraw (Namikawa et al., 1995)
- Hemoglobin phenotype of the tamaraw and Asian buffaloes based on isoelectric focusing (Solis et al., 1995)
- Electrophoretic blood protein variations in the tamaraw (Solis, 1996 Unpublished masteral thesis)
- Phylogenetic relationship among living species of genus *Bubalus* including tamaraw (Tanaka et al.,

1996)
• Transferrin polymorphism in the tamaraw and other Asian buffaloes (Solis et al., 1998)
• Cytogenetic analysis of the tamaraw (Tanaka et al., 2000)

The captive breeding component of TCP was realized when a 280-ha captive breeding facility known as "gene pool" was established near the southern border of the Mangyan Heritage Park. Captive breeding is undoubtedly a vital component of any wildlife conservation activities in order to prevent the population of a species from decreasing to critically low. Among the activities undertaken in the breeding facility are monitoring of tamaraws in the wild, husbandry and veterinary care of the tamaraws and capture of tamaraws. The tamaraws in the gene pool were caught using pit traps. It seemed that this method of trapping was too stressful because it resulted in some deaths. There were also tamaraws that died on their way to the gene pool. Mortalities were also recorded in the breeding facility due to infighting among adult bulls for dominance. The breeding facility was a failure because of its remote location, damage to the facilities from fires during summer and flooding during monsoon season, presence of armed insurgents, and delayed release of funds resulting in operational problems and low morale among the personnel (Cox and Woodford, 1990). If everything fails to get the tamaraw off the endangered list, the last recourse is cloning. Begley (2000) in her article which appeared in the October 23, 2000 issue of Newsweek stated that "with the growing number of species facing extinction, scientists have turned to a desperate strategy: replicate them - in surrogate moms." Who has not heard of Dolly, a sheep, and the world's first cloned mammal? In addition, just recently, scientists from the Massachusetts biotech firm Advanced Cell Technology reported the successful cloning of a gaur, the first endangered species to be cloned (Begley, 2000). Gaurs are oxen-like animals that are native to Southeast Asia and India. Their population has dwindled in recent years to 36,000. Unfortunately, the cloned gaur named Noah died from clostridial enteritis a day after birth (The Japan Times, January 14, 2000).

2.7.5 The Need for A Meaningful Conservation Education Program

The public education component of TCP, which I believe the most important in any conservation program, was not adequately implemented. According to Petocz (1989), there were on-going educational campaigns about the tamaraw aimed to raise the level of awareness among the people the need to protect the tamaraw such as poster making and drawing contests for school children. The tamaraw was even depicted in the Philippine one peso coin issued during Cory Aquino Administration. I think these measures failed miserably because they focused mainly on the tamaraw. The more important aspect of any educational campaign that is educating the people to respect and protect the habitats of wildlife was not given importance. People should be made to realize the negative impacts of lumbering and other forms of forest destruction on the survival of wildlife. This may be a tall order considering that many people largely depend on forest and forest products for their source of livelihood; but this can be done. Educational curricula at all levels of education should incorporate courses on wildlife conservation and protection of their habitat. Brochures, pamphlets and other forms of reading materials on wildlife conservation measures should be written in Pilipino and other native dialects understandable to all and most important readily available. It is sad to note that information on Philippine wildlife is very rare nationally. Much of the information is available only in international magazines or publications such as the National Geographic Magazine. However, how many Filipinos in rural areas have seen National Geographic Magazine or any publications on wildlife, much more can afford to subscribe one? Even if

they are available locally, they are written in technical manner not easily understood by most people. Information campaigns on wildlife protection should be aimed also at lawmakers who appear insensitive to the sad plight of forests, home to many precious wildlife species. Lawmakers seem to be interested more in passing laws that would make it a lot easier for Filipinos and foreigners to obtain logging concessions. Community based conservation programs could also adopted such as the CAMFIRE (Communal Areas Management Programme for Indigenous Resources) in Zimbabwe. Under this, approach " The people in a community through a representative asks the government wildlife department to grant them the legal authority to manage its wildlife resources. Some communities sell photographs and hunting rights to foreigners under rules and quotas set by them in consultation with the wildlife department." Considering the alarmingly rapid pace some wild species are becoming extinct, there is really an urgent need to take bold measures to prevent other endangered species from meeting the same fate. Otherwise, the future generation's knowledge of wildlife species will be solely based on photographs or illustrations found in books or on museum specimens such as mounted skeleton and preserved specimens. Although preserving organisms and then putting them on display in museums is one way of retaining them for posterity it would be nice also to keep a few of them alive either in zoos or in their natural habitat for future generations.

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閣僚失言の政治的帰結とその実証に関する試論：国政選挙における得票率と当選者数の変化から

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１．はじめに

閣僚の発言が，国政の場，または，マスメディアで取り沙汰され，それが，時には，国内社会に波紋を広げ，また，その発言が外交問題に発展することがある．所謂「失言」と呼ばれる発言である．森喜朗首相の「日本は天皇中心の神の国である」という発言，無党派層に対する「寝ていてくれれば」という発言，越智通雄金融担当相の「金融機関に手心を加える」とした発言，西村真悟防衛政務次官の「核武装検討」発言等は，その閣僚「失言」の例として記憶に新しい．そして，場合によっては，当該閣僚は，閣僚辞任という政治的責任をとることさえある．

本稿の目的は，閣僚「失言」の政治的帰結の考察とその実証を試みることである．具体的には，「失言」の政治的機能，政治的影響，そして，「失言」した閣僚の政治的責任を考察する．次に，野党の支持拡大，得票率増大という政治的帰結に焦点を当て，この意味での政治的効果の有無を検証する．野党が「失言」をめぐり政権与党に揺さぶりをかける背景には，野党の支持拡大，票獲得という政治的判断があると考えられるからである．そのために，衆議院総選挙における「失言」前後の相対得票率（以下，得票率と称す），当選者数の変化，そしてマスメディアによる世論調査にも注目する．そもそも，政治言語研究なり言語政治研究の中で，政治言語の機能の実証は，ほとんど未開拓な最も遅れた領域である．この意味からすれば，「失言」の政治的機能ないし帰結を実証するという試みは，政治言語研究の深化に寄与するといえるのである．

最後に，本稿における「失言」の定義であるが，差し当たり，閣僚の発言が，弁明，釈明，陳謝，謝罪もしくは辞任といった何らかの責任をとった場合を「失言」とする．

２．先行研究の素描

筆者は，別稿（2001: 32-34）において，戦後日本政治における閣僚失言の年表を作成した．これに示されるように，戦後日本政治の中で，閣僚失言は，数多，繰り返されている．この年表では，2000年２月の越智金融担当相の失言までを取り扱ったが，周知のように，それ以後も森首相の一連の発言が物議を醸している．このような状況にも関わらず，閣僚失言は，政治学そのものの中では，研究対象とされているわけではない．確かに，日本政治史の中では，若干ながら失言に関する記述があるが(1)，それらは，事実の列挙に過ぎず，失言をめぐる政治過程を正面から取り上げたものではない．この観点からすれば，戦争責任論の文脈での歴史認識研究の中で取り上げられる政治家の発言も同様である(2)．しばしば日中戦争，アジア太平洋戦争における日本軍の行為の是非をめぐる政治家の発言について言及されるが，それは，発言者の歴史認識と政治的信念，政治的思想が表面化した一つの事例としての位置づけであり，日本

広島大学大学院国際協力研究科『国際協力研究誌』第８巻第１号，2001年，pp. 19–31

政治史における失言の扱い同様，発言とその帰結に分析を加えるものではない．本稿は，失言と呼ばれる閣僚発言の政治的帰結の考察とその実証を試みるものである．失言を生み出す政治的思想，政治的信念の考察を目的とはしていない．別言すれば，本稿は，閣僚発言が失言となるプロセスとそれ以後の失言にまつわる政治的帰結を対象とし，政治的信念・思想が具体的な発言として実現される経緯は対象としていない．

しかしながら，政治学において，失言を分析対象としていないことは，必ずしも，失言の研究対象としての重要度の低さを意味するものではない[3]．そもそも政治学においては，政治家の失言だけではなく，政治と言語の関係には，十分な注意を払ってこなかった[4]．

このような状況下でも，日本の政治家の失言に注目した著書, 論文は幾つか数えることが出来る．それについては，先の別稿（2001:19-21）にて詳しく述べたので詳細は割愛し，本稿に直接の関わりをもつ側面にのみ言及する．

若宮啓文の『戦後保守のアジア観』は，閣僚失言を通し，その背景，歴史的文脈から日本の保守政治家たちのアジア認識を明らかにするものである．戦争責任論の文脈での歴史認識研究が，失言を発信者の歴史認識の現れと位置づけたのに対し，逆に，失言からその政治的信念，政治的思想を明らかにしている．若宮は政治家の失言に一章を割き，日中戦争，アジア太平洋戦争がアジア解放のためであったとする戦争史観の存在が，保守政治家の一つの典型的なアジア観を形成すると説く．

また，Ofer Feldmanは，閣僚失言を日本の政治文化の特徴である本音と建前の事例として論じた（フェルドマン 1996,Feldman 1998）．しかしながら，両者ともに，そもそも失言とは何か，どういった政治家の発言が失言となるのか，に対しては明確な回答を与えていないし，それら失言の政治的帰結については，ほとんど言及していない．前者については，拙稿（2001）で明らかにした．そして，後者とその実証についての考察が，まさに本稿の目的なのである．

拙稿（2001）においては，失言に関し次のような結論を導き出した．閣僚が，差別的意味合いを持つ発言，日中戦争，アジア太平洋戦争における日本軍の行為を肯定するような発言，日本の核軍備を議論する必然を問う発言，そして憲法九条改正を議論すべきとの発言をし，かつ，その結果，外交問題となり, 与野党内から批判の対象となり，マスメディアから頻繁に取り上げられる場合は，その閣僚発言は失言として政治の世界で理解され，政治的責任を伴う結果となる．また，閣僚が，政府の公式見解とは異なる発言をし，その結果，その発言をめぐり国内外で政治問題化した場合には，その当該閣僚は辞任という政治的責任をとらざるをえない．しかしながら，上記の研究においては，閣僚失言の政治的帰結の考察とその実証までには至らなかった．

もちろん，政治家の失言に何らかの言及がある論文は，さらに存在するだろうし[5]，より広義に捉え，政治の言語に言及する論文・著書は上述のもの以外にも幾つも存在するであろう[6]．しかしながら，政治家の失言そのものに関する著書，もしくは失言をデータとし，政治の一側面を考察しようとするものは限りなく希であることは間違いない．

３．閣僚失言の政治的帰結

本節では，閣僚失言がどのような政治的機能と政治的影響を持つかを明らかにする．これには，当該閣僚の政治的責任も含まれる．本来なら，まず，各失言の事例を詳しく吟味した上で，その政治的帰結を明らかにすべきであるが，紙幅の制約から，発言内容の詳細については，拙稿（2001:32-34）に委ねる．

政治的機能という観点からは，失言は野党にとって与党攻撃の所謂「材料」,「武器」になるという点が挙げられる．ここでの,「材料」,「武器」は，後述するように，失言を争点にし，国会内の委員会等の審議を中断させる手段として機能することを意味する．政治的影響という点からは，外交問題として発展し，失言関係国との外交関係を揺るがすことが指摘できる．例えば，日中戦争，アジア太平洋戦争における日本軍の行為を肯定するような発言では，中国，韓国から強い批判がある．具体例を挙げれば，江藤隆美総務庁長官の

「日韓併合時の日本軍が善政も布いた」とする失言に対し，政府・与党は，河野洋平外相が訪韓して日本側の措置を説明して，一件落着にしようとするもくろみであったが（『毎日新聞』1995月11月11日），韓国外務省は11月８日には，江藤発言に対し遺憾の意を表明，日本政府に適切な処置を求めた．そればかりではなく，現実的に河野外相訪韓拒否という強い抗議を示した．韓国政府の強い抗議の前に，ついに同月13日辞任に至っている．また，アメリカの黒人を侮蔑するような失言に対しても，アメリカ世論の大きな批判にさらされている．桜内義雄衆院議長，梶山静六法務大臣，渡辺美智雄自民党政調会長の場合が，この事例に該当する(7)．

次に，特に連立内閣の場合，与党内の政権基盤を揺るがすという政治的影響も存在する．例えば，中西啓介防衛庁長官の憲法改正に関わる一連の発言に対し，与党・社会党からは，責任追及の声が挙がった．政府・連立与党は，社会党の生命線ともいえる憲法問題の扱いを誤れば社会党の離反を招き，連立政権の基盤そのものを危うくしかねないとの判断があり（『読売新聞』1993年12月３日），辞任で事態の早期収拾を図った．辞任閣僚だけを例に挙げたものが表１であるが，ほとんどの場合，上記三点の政治的帰結が存在する．もちろん，失言の政治的帰結が，上記の三点に限られるわけではないが，差し当たり，拙稿（2001）における閣僚失言の事例研究の過程においては，上記の三点が顕著な政治的帰結として挙げられる．

以下，上記の政治的帰結に関する事例を具体的に検討したいが，全ての事例について，言及することは困難である．そこで，特に第一の「攻撃材料」としての失言の機能に注目する．「はじめに」で触れたように，本稿の目的の一つは，失言の政

表１　失言の政治的帰結

発言者	役職（当時）	発言内容	発言内容の関係国政府の反応	与党政権の存立基盤状況，政府与党の反応	野党の反応，特に，野党が「攻撃材料」として，失言を用いたか否か
藤尾正行	文部大臣	歴史認識	中国・韓国両政府が遺憾表明	自民単独，倉成外相が遺憾の意を表明．中曽根首相は訪韓の際，陳謝	不明(1)
浜田幸一	衆院予算委員長	個人への中傷	無	自民単独，奥田衆院予算委員会筆頭理事が遺憾の意を表明	浜田発言をめぐり，1988年２月８日開催予定の衆院予算委員会は空転，同日国会も終日空転．共産党は罷免要求，他の野党は責任追及
奥野誠亮	国土庁長官	小平批判，歴史認識	中国・韓国両政府が遺憾表明	自民単独，竹下首相，宇野外相が遺憾の意を表明	1988年４月25日衆院土地問題等特別委員会において，質疑集中．社会党，共産党は，奥野長官の罷免要求と竹下内閣の政治責任を追及
中西啓介	防衛庁長官	憲法改正	無	非自民連立内閣，与党社会党罷免要求	1993年12月２日の衆院予算委員会での紛糾の原因となり，審議が中断し，空転した．自民党，共産党は罷免要求
永野茂門	法務大臣	歴史認識	中国・韓国両政府が遺憾表明	非自民連立内閣（少数与党），与党公明党は批判，羽田首相も批判	自民，社会，共産の各野党が衆議院解散，総選挙に追い込む構えを見せた．社会党，共産党は罷免要求，自民は羽田首相の責任追及
桜井　新	環境庁長官	歴史認識	中国・韓国両政府が遺憾表明	自社さ連立内閣，村山首相が遺憾の意を表明．与党社会党内から激しく非難	共産党は罷免要求，他の野党も責任追及．委員会等の空転はなし．連立維持を最優先にした自民党の政治的判断により，早期辞任
江藤隆美	総務庁長官	歴史認識	韓国政府が遺憾表明	自社さ連立内閣，社会党は不快感，さきがけは批判，自民は強気の姿勢	不明(2)
西村真悟	防衛政務次官	核武装検討論	中国・韓国両政府が遺憾表明	自自公連立内閣，「三党の政権合意とは全く無関係」と更迭	野党各党は，人事を主導した小渕首相の責任追及の形で，1999年５月29日招集の臨時国会で内閣不信任決議案を提出する構えを見せた．
越智通雄	金融再生委員長	金融機関への検査に手心を加える	無	自自公連立内閣，公明党，自由党は批判，自民党執行部も更迭の方針	2000年２月25日午前の衆議院予算委員会の審議を中断させた．民主，共産，社民の野党三党は，罷免要求

注．（1），（2）ともに新聞紙上に野党の反応が掲載されていない．野党の反応が無いことを必ずしも意味しない．

治的帰結の実証を試みることである. 後述するが, 帰結の実証に関しては,「攻撃材料」の背景にある野党の支持拡大, 票獲得という機能が働いたか否かを考察する. ここではまず, 政治的機能に焦点を当てる所以である.

野党からの「攻撃材料」としての失言の事例は, 枚挙の暇がない. 最近の事例では, 2000年５月の森首相の「日本は天皇中心の神の国」とする発言でも野党の「攻撃材料」としての政治的機能を果たしている. 同月15日の発言後の17日には, 民主, 共産, 自由, 社民の四党は, 国会内で幹事長・書記局長会談を開き,「憲法の国民主権の理念に反し, 首相としての適格性に欠ける」として, 首相の退陣を求める方針を確認している（『朝日新聞』2000年５月18日）. それ以後, 衆参両議院において, 野党は責任追及の手を緩めなかった. この政治的状況下, ５月26日, 森首相は, 所謂「神の国」発言について, 首相官邸で釈明のための記者会見を開いた. 首相は,「十分に意を尽くさない表現によって多くの方々に誤解を与えたことを深く反省している. 国民の皆様方に心からおわびを申し上げる」と改めて陳謝したが, 発言そのものの撤回はしなかった（『朝日新聞』2000年５月27日）. 与党の公明党と保守党は, 同首相の釈明会見に一定評価の理解を示すが, 野党四党は, 発言を撤回しない首相の資質こそが問題であるとし, 攻撃の姿勢をさらに強めることとなった. こういった状況下, 朝日新聞の世論調査によると, 森内閣の支持率は19%で, 前回調査（４月）の41%から急落することとなる. 不支持率も前回の26%から62%に急増する結果となった（『朝日新聞』2000年５月30日）. 調査方法は異なるが, 毎日新聞, 読売新聞の世論調査でも, 同じように低い支持率と, 高い不支持率を示している.

周知のように, 森首相の場合, 上記の所謂「神の国」失言に止まらず, 2000年６月３日には,「国体」という表現を用いることにより, 野党四党に一斉に非難されている. そればかりではなく, ６月25日の衆議院総選挙直前の６月20日には, 投票態度を明確にしていない有権者に対する「寝てしまってくれれば」の失言で, 野党の集中砲火をあびることとなる. 民主党は総選挙前に, 森首相の「寝てしまってくれれば」を批判する新聞広告を一面に掲載した. この批判広告が物語るように, このような野党の非難は, 国民の支持獲得, つまり選挙における票獲得があると考えることが妥当であろう. つまり, 野党の「攻撃材料」としての政治的機能の背景には, 票獲得, 支持拡大を目的とする野党の政治的判断が存在すると言える. 果たして, 野党が目論む支持拡大, 票獲得という政治的機能は働いたのか. これについては, 次節にて言及したい.

上記の森首相の一連の失言ばかりではなく, 他のほとんどの閣僚失言に対しても, 野党は, 時の政権を揺さぶる「攻撃材料」として, 失言を利用してきた. 具体的には, 失言をめぐり委員会の審議を中断するといった行動と共に, 失言者の責任追及, もしくは罷免要求, そして, 時には任命者である首相の責任, または資質を問うことにより, 時の政権に揺さぶりをかけたのである.

表１に示すように, 他の閣僚失言に対しても同様の機能を見ることが出来る. 例えば, 2000年２月の越智通雄金融再生委員長の所謂「手心」発言に対しても, 野党各党は, 失言を「攻撃材料」とし, ２月25日午前の衆議院予算委員会の審議を度々ストップさせた. また, 西村真吾防衛政務次官の所謂「核武装検討」発言に対しても, 野党各党は一斉に同政務次官の罷免要求をした. そればかりではなく, 小渕首相にも任命者としての責任追及の狼煙を挙げることとなる. 具体的には, 人事を主導した小渕首相の責任追及の形で, ５月29日招集の臨時国会で内閣不信任決議案を提出する構えを見せた.（『朝日新聞』５月21日）

このように, ほとんどの閣僚失言に対し, 野党各党は, それを非難の対象とし, 失言者の辞任要求, 任命者である首相の責任追及という手段を講じる. まさに, 閣僚失言は, 政権与党にダメージを与える「攻撃材料」としての政治的機能を果たしているのである.

次に, 当該閣僚の失言による政治的責任という政治的帰結について若干の考察を加えたい. 具体的には, 当該閣僚の失言後における政治生命の中で, どのような政治的責任が生じているのか, を失言後の経歴から考察したい. これは, いわば, 政治の世界で下された政治的責任といえる. つまり, これは, 身内である政治家による意識的な政

治的責任で，必ずしも，有権者によって下された政治的責任を意味しない．後者については，次節で若干言及したい．

表２は，失言により最も重い政治的責任をとったと考えられる辞任閣僚のその後の主な経歴である．ここでの経歴は，行政歴，国会歴，党歴を指すが，委員長，会長，幹事長等の「～長」職に限り，政務次官，院内委員会理事，党内の代理職・副会長等は含めないものとする．また，表２に示す経歴は，失言後の各国政選挙直後の『政治ハンドブック』各号を参考にした．全ての経歴を網羅しているとは，必ずしも断言できないが，『政官要覧』，『政官ハンドブック』も参照し，経歴漏れがないように努めた．表２からは，当該閣僚の政治的責任を窺い知ることが出来る．まず，第一に閣僚への再任が無いということである．第二に，国会内の重要ポスト，例えば，衆院予算委員長などへの就任もない．そればかりか，自民党だけでみれば，三役といった重要ポストへの就任の道も絶たれていることが窺える．他のスキャンダルでの辞任の場合，再任があるにも関わらず，失言での場合は，皆無である[8]．これらは，失言の重要な政治的帰結の一つと言えよう．しかしながら，以上の重要な政治的帰結は，失言により辞任した閣僚のみに限定すべきである．1984年に自民党政調会長であった藤尾正行は，自民党研修会で「天皇制や教育勅語には間違いは一つもない」と発言し，物議を醸したが，２年後には文部大臣に就任している．また，1994年，橋本龍太郎通産大臣は，第二次世界大戦の侵略性に関する発言で物議を醸し，弁明に至っているが，周知のように，1996年１月には，首相に就任している．このように，政治的責任の上記の帰結は，失言を主因とし，辞任した閣僚に限定しなければならない．

表２　失言後の当該閣僚の経歴

年/月/日	発言者	役職（当時）	発言内容	その後の経歴
1986/07-09	藤尾正行	文部大臣	歴史認識	党資源・エネルギー調査会長，党国土開発近畿圏委員長
1988/02/06	浜田幸一	衆院予算委員長	個人への中傷	党広報委員長，党東京湾開発委員長
1988/04-05	奥野誠亮	国土庁長官	小平批判，歴史認識	党行財政調査会長，党教育問題連絡協議会長，衆院政治倫理審査会長
1993/11	中西啓介	防衛庁長官	憲法改正	自由党選挙対策委員長，自由党国土建設部会長，自由党沖縄北海道部会長
1994/05/04	永野茂門[1]	法務大臣	歴史認識	なし
1994/08/12	桜井　新	環境庁長官	歴史認識	衆院政治倫理の確立及び公職選挙法改正に関する特別委員会委員長，党電源立地等推進調査会長
1995/11/09	江藤隆美	総務庁長官	歴史認識	党中国地方開発委員長，党水資源開発特別委員長，自民党江藤・亀井派会長
1999/10	西村真悟	防衛政務次官	核武装検討論	衆院懲罰委員長，自由党法務部会長
2000/02/19	越智通雄	金融再生委員長	金融機関への検査に手心を加える	なし

出所　宮川隆義編，各号，政策時報社（1999）を参考に筆者作成
注.（１）参議院比例代表区による一期のみの当選

４．失言の政治的帰結の実証

本節においては，野党が「攻撃材料」として失言を用いる背景にある，野党の支持拡大，票獲得という政治的機能が働いたか否か，を衆議院総選挙における得票率, 当選者数の変化から考察する．そもそも，政治言語研究においては，言語，ディスコースから得られた仮説を如何に実証するかという課題が残されている（松尾1987: 181，拙稿2000: 41）．例えば，グレン・フックは「核アレルギー」という隠喩表現が，日本における核兵器の容認，ひいては軍事化の容認のために有効な道具であったことを指摘している（フック 1986）．確かに,「核アレルギー」という言語表現が国民一般に対し軍事化容認のためになにがしかの影響を与えたという結論に異存はないが，それが現実に国民にどのように理解され, 受容されたか, また, 受容されたことにより軍事化の容認にどの程度寄与したか（松尾 1987: 181）という点については，明らかにされていない．また，クラウス・ミューラーは，第三帝国の言語操作は，個人と集団とを社会に統合させることに貢献したと論じる（Mueller 1973: 25-34）．国民の感情を揺り動かし，影響を与えたであろうが，そういった言語に接した人々は果たして本当にそれらの言葉を受け入れたのであろうか（Mueller 1973: 33）．このように，これまで，政治言語研究において，機能の実証という分析上の課題には，ほとんど踏み込んでいないのが現状である．

確かに，失言の政治的機能の実証を行うには，他の方法も考えられる．例えば，出口調査，アンケートといった方法も有効であろう. 具体的には，有権者に対し，失言後にインタビューなりアンケートをとり，野党の支持拡大という機能が働いたことを実証できるであろう．しかしながら，それらの調査方法は，非常な労力を必要とする作業になるであろう．本稿においては，差し当たり，得票率，当選者数の変化に注目し，その政治的機能の実証を試みる．有権者へのアンケート，インタビューといった方法による機能の実証については，後日の課題とする．この意味において，本稿はあくまでも，政治言語研究の機能の実証という課題に対する一つの試論である．

具体的には，失言者の中でも，最もその政治的責任の取り方が重い，辞任した閣僚の失言前後の衆議院総選挙における得票率，当選者数の比較を行う．まず，1986年７月６日に実施された第38回総選挙と1990年２月18日に行われた第39回総選挙の状況を概観する．その間には，藤尾正行文部大臣，浜田幸一衆院予算委員長，奥野誠亮国土庁長官が失言による政治的責任を取り, 辞任している．第38回総選挙において，公明，民社，共産の野党三党は，それぞれ得票率を減らし，その議席数もそれぞれ10議席前後の減少である．一方，社会党は，その得票率を17.23から24.39まで伸ばし，当選者数も53議席増の136議席を獲得し，大躍進した．他方，自民党は，３ポイントほど得票率を減少させたものの，275の議席数を確保した．しかしながら，野党・社会党のこの躍進を失言の機能の実証として，位置づけることは，困難である．この大躍進の背景には，消費税闘争で頑張った論功行賞,「おたかさんブーム」によることは間違いないからである（田中 1996: 330）．つまり，ここでは，失言は，野党の票獲得という機能はあまり果たしていないといえよう．事実，表３に示すように，失言によって，何らかの政治的責任をとった当該閣僚は，失言後の衆議院選挙において，ほとんど再選を果たしている．確かに，越智金融担当相は，失言後の選挙で落選しているが，そもそも失言前の第41回総選挙（1996年10月20日）における小選挙区でも落選し，比例区で復活当選している．西村防衛政務次官の場合は，失言前後で同じ小選挙区制である．この得票率の著しい減少は，同氏の核武装検討論に対する有権者の批判的態度の現れであるかも知れないが，こう断じるには，有権者へのアンケート，インタビューといったさらなる分析が必要となろう．

1993年７月18日実施の第40回総選挙と1996年10月20日実施の第41回総選挙の比較であるが，この両者の比較は困難な側面を持つ．つまり，これは中選挙区制から小選挙区比例代表並立制への移行時であり，単純に中選挙区間同士の比較が出来ない．また，周知のように，第40回総選挙前に新党さきがけ，新生党が自民党から離脱し，新たに結党され，その後は，新生党は，新進党へと変遷し，政党再編の動きが激化する[(9)]．ただ，40回と41回

表３　失言閣僚の相対得票率 (1)

年/月/日	発言者	役職（当時）	失言前（%）（選挙日）	失言後（%）（選挙日）	当選順位の変化と当落	選挙区（定数），（小）は小選挙区を示す
1983/01/19	中曽根康弘	首相	23.8（1980/6/22）	30.1（1983/12/18）	２→２（当）	群馬三区（４）
1984/09/17	藤尾正行	自民党政調会長	15.4（1983/12/18）	18.6（1986/7/6）	５→１（当）	栃木二区（５）
1986/07-09	藤尾正行	文部大臣	18.6（1986/7/6）	15.8（1990/2/18）	１→２（当）	栃木二区（５）
1986/09/22	中曽根康弘	首相	28.1（1986/7/6）	19.9（1990/2/18）	２→３（当）	群馬三区（４）
1988/02/06	浜田幸一	衆院予算委員長	23.1（1986/7/6）	16.7（1990/2/18）	１→３（当）	千葉三区（５）
1988/02/24 07/23	渡辺美智雄	自民党政調会長	27.4（1986/7/6）	18.5（1990/2/18）	１→２（当）	栃木一区（５）
1988/04-05	奥野誠亮	国土庁長官	19.2（1986/7/6）	14.6（1990/2/18）	１→３（当）	奈良全県区（５）
1990/09/21	梶山静六	法務大臣	34.1（1990/2/18）	31.2（1993/7/18）	２→１（当）	茨城二区（３）
1992/01/20	桜内義雄	衆議院議長	15.8（1990/2/18）	13.2（1993/7/18）	２→４（当）	島根全県区（５）
1993/11	中西啓介	防衛庁長官	26.4（1993/7/18）	35.1 (2)（1996/10/20）	３→１（当）	和歌山一区（３） 和歌山一区（小）
1994/04/25	小沢一郎	新生党代表幹事	40.8（1993/7/18）	64.7（1996/10/20）	１→１（当）	岩手二区（３） 岩手四区（小）
1994/05/04	永野茂門 (3)	法務大臣				
1994/08/09	島村宜伸	文部大臣	15.0（1993/7/18）	39.0（1996/10/20）	３→１（当）	東京十区（５）
1994/08/12	桜井　新	環境庁長官	14.1（1993/7/18）	40.8（1996/10/20）	３→１（当）	新潟三区（５） 新潟二区（小）
1994/10/24	橋本龍太郎	通産大臣	28.4（1993/7/18）	68.0（1996/10/20）	１→１（当）	岡山二区（５） 岡山四区（小）
1995/06/03	渡辺美智雄	(4)	25.1（1993/7/18）	(5)（1996/10/20）	１	栃木一区（５）
1995/11/09	江藤隆美	総務庁長官	35.1（1993/7/18）	55.5（1996/10/20）	１→１（当）	宮崎一区（３） 宮崎二区（小）
1999/10	西村真悟	防衛政務次官	42.7（1996/10/20）	15.9 (6)（2000/6/25）	１→４（落）	大阪十七区（小）
2000/02/19	越智通雄	金融再生委員長	26.2 (6)（1996/10/20）	22.2 (7)（2000/6/25）	２→２（落）	東京六区（小）
2000/05/15・06/04・06/20	森　喜朗	首相	51.7（1996/10/20）	64.4（2000/6/25）	１→１（当）	石川二区（小）

出所　宮川隆義編，各号を参考に筆者作成
注.（１）相対得票率＝得票数÷有効投票総数×100，小数点第二位は四捨五入
（２）1996年10月20日実施の第41回衆議院選挙より小選挙区制を導入．それ以降の得票率は小選挙区でのもの
（３）参議院比例代表区による一期のみの当選
（４）当時は閣僚ではないが，新聞紙上では元副総理・外相として扱われている
（５）渡辺美智雄は任期途中で病死．代わって長男喜美が出馬．因みに得票率は83.4で，当選
（６）小選挙区では落選したが，比例代表区で当選
（７）落選

に関して，自民党の得票率の変化をみれば，第40回中選挙区では36.62で，41回小選挙区では38.63，同比例区では32.76である．しかしながら，これらの変化よりむしろ，第41回総選挙における小選挙区と比例区間の得票率の格差に注目すべきであろう．これについては，後に，言及することとする．当選者数は，第40回での223人から239人（小選挙区169，比例区70）であり，特に大きな変化ではない．その間の失言で辞任した自民党閣僚，桜井新環境庁長官，江藤隆美総務庁長官は表３で示すように両者とも再選を果たしている．

以上のことから，断片的ながら，特に中選挙区制度においては，失言でどのような政治的責任をとろうが，それが辞任であったとしても，選挙における野党票の拡大にはほとんど影響しないということが，指摘できよう．表３が示すように，全ての失言閣僚は，再選を果たしているし，中には，その得票率を上げた議員さえいる．これからは，失言閣僚の選挙におけて，その当落には，失言はほとんど影響しないことが指摘できる．また，このことは，前節の当該閣僚の政治的責任に関して言えば，当該閣僚の選挙区有権者によって下される政治的責任は，ほとんどないことも示唆している．つまり，当該閣僚の選挙区レベルで，失言が争点となることは，ほとんどないと言える（山田 2000: 258）．

加えて，野党がその得票率，当選者数を大きく増大させた状況もない．確かに，既述のように第39回総選挙において，野党・社会党は，得票率，当選者数共に大きく伸ばしている．しかしながら，その主要因は，既述のごとくである．野党各党が，失言を利用し，時の政権与党に揺さぶりをかける政治的機能は，失言者が，辞任するという一例をみても，機能しているといえるが，票獲得，支持拡大には，寄与していないと言って差し支えないであろう．しかしながら，この結論付けは，第40回総選挙以前の中選挙区制度下に限定すべきであろう．この結論は，第41回以降の比例区での得票率，当選者数には必ずしも該当するとはいえないからである．また，失言閣僚が再選を果たす状況も，都市部ではなく，地方で支持基盤がしっかりと定着した閣僚経験者といった政治家に限定すべきであり，都市部を選挙区とする政治家が失言により辞任した場合，落選の可能性も十二分にあり得る．

第41回衆議院総選挙以降の比例区において，失言が野党の得票率，当選者数に影響を与えたか否か，別言すれば，失言が，失言者所属の党の得票率と当選者数の減少と攻撃野党のそれらの増大に対し，機能したか否か，を考えるとき，その最も顕著な事例は，森首相の首相就任以来の一連の失言である．まず，1996年10月20日実施の第41回総選挙と2000年６月25日実施の第42回総選挙の結果の比較を試みる．因みに，小選挙区における自民党の得票率は，38.63から40.97にわずかながら上昇している．当選者数も169人から177人に増加している．これを見る限り，失言は，小選挙区においても，中選挙区同様，その得票率，当選者数の増減に対し機能しない，という結論が導かれるだろうが，都市部を中心に当選回数を重ねた国会議員が落選している．このことから，この結論は，断片的なものでしかない．また，両総選挙間に失言で辞任した，西村防衛政務次官は表３に示すように，その得票率を大きく減少させている．結果的には，比例代表区で復活当選を果たしているが，この得票率の大きな後退には，失言の影響が少なからずあると考えられるが，そう断じるには，有権者へのインタビュー等のさらなる分析が必要であろう．一方，越智金融担当相の場合は，第42回総選挙で落選している．確かに，得票率は，26.2から22.2へとわずかながら減少しているが，そもそも第41回総選挙でも，小選挙区で落選し，比例代表区での復活当選をしている．６万票前後の得票能力しかない同氏の場合，東京六区における当選はもともと困難であったともいえ，同氏の失言が，有権者の投票行動にネガティブに機能したのかどうかは，推測の域をでない．しかし，第41回総選挙の場合は，全国的な知名度を持つ，岩國哲人が東京六区で当選している．その得票率は，34.5である．同区では，後に第42回総選挙で，越智通雄に得票率において15.1ポイントの差を付けて当選した民主党（第一次）[10] の石井紘基が，立候補したが，その得票率は，21.8で越智通雄に続き，第三位である．得票率でも，越智通雄に4.4ポイントの差をつけられている．その石井は，第42回においては，得票率を前回より大きく伸ば

し（37.3），前回とは逆に越智に15.1ポイントの差をつけて当選を果たしている．この得票率の変化は，岩國票が流れたのか，それとも所謂浮動票が流れたのか，不明であるが，どちらにしても，票流動の背景には，本人の失言と森首相の一連の失言が影響していると考えられる．特に，後者については，第42回総選挙小選挙区で落選した，大臣経験者で，所謂自民党大物議員が，その敗因の一つに，「寝ていてくれれば」等の森首相の失言を挙げていることも（『朝日新聞』６月29日），それを裏付けるものと言える．落選議員のこの敗因分析の妥当性については，若干の疑問が生じるが，選挙戦を通じ，有権者，そして運動員等から得られた実感として，差し当たり理解しておく．これは，森失言が，都市部の小選挙区において，無党派層の投票行動に影響を与えたことを推測させるものである．

比例区において，有権者の投票行動に森首相の失言が影響したことを指し示すものの一つに，メディアによる内閣支持率の世論調査がある．朝日新聞は，所謂「神の国」発言以後の５月28，29日の両日，電話調査による世論調査を行っている(11)．前述のように首相就任当初の４月に行われた調査と比べ，森内閣支持率は41%から19%に急落し，不支持率は26%から62%に激増している．世論調査の質問項目の中で，森首相の「神の国」発言は，首相の発言として問題か否か，の質問に対し，67%が問題有りと回答し，問題無しとした23%を大きく上回っている．また，５月26日の森首相の釈明会見で，発言撤回をしなかったことに関する質問に対しても，納得できないが60%で，納得できるの23%を大きく上回っている．加えて，６月25日の総選挙での投票で「神の国」発言を重視すると答えた回答者も33%に上っている．この結果に，総選挙直前の「寝ていてくれれば」発言の影響を勘案すれば，森首相の一連の失言が，比例区において，影響したと考えられるであろう．より具体的には，蒲島のいう「バッファー・プレイヤー」(12)，そして無党派層の投票行動に影響を与えたと考えられる．表４に示すように，衆院比例区における自民党の得票率と当選者の減少，そして民主党の躍進は，それらを示唆するものである．他の野党でも，社民党が４議席の増である．具体例として，比例区において，東京25選挙区の内，17区を除き，24の選挙区で，民主党が第一位であることが，その証左であろう．前回の第41回総選挙では，25選挙区の内，半数以上の15選挙区で自民党が，第一位であったことと比較しても，森失言が「バッファー・プレイヤー」，無党派層に影響を与えたと考えて差し支えないであろう．当然，これは，党首イメージ効果ともいえるもので，首相以外の閣僚失言が比例区にまで影響するか否か，を判断する材料とは必ずしも言えない．しかしながら，少なくても，森首相の失言が衆院比例区において，有権者の二票の使い分けに影響を与えたことは，否定できないだろう．

表４　衆議院比例区における党派別総選挙結果

		第41回 1996年10月20日	第42回 2000年６月25日
時の内閣		第一次橋本連立	第一次森連立
自民党	相対得票率 当選者数	32.76 70	28.31 56
新進党	相対得票率 当選者数	28.04 60	—
新生党	相対得票率 当選者数	—	—
自由党	相対得票率 当選者数	—	11.01 18
保守党	相対得票率 当選者数	—	0.41 0

		第41回 1996年10月20日	第42回 2000年６月25日
時の内閣		第一次橋本連立	第一次森連立
公明党	相対得票率 当選者数	—	12.97 24
民主党	相対得票率 当選者数	16.10 35	25.18 47
共産党	相対得票率 当選者数	13.08 24	11.23 20
社民党	相対得票率 当選者数	6.38 11	9.36 15
さきがけ	相対得票率 当選者数	1.05 0	—

出所　宮川隆義編（2000: 206）を参考に筆者作成

因みに，参議院比例区における自民党と野党の得票率，当選者数を概観する．第17回参院選挙（1995年７月）で自民党は，その得票率を前回より大きく下回っている．しかし，それは投票率が44%と過去最低であり，結果的に，創価学会など組織票のある新進党に有利になったことと，阪神淡路大震災，オウム事件でのリーダーシップ不足など，村山政権に対する不支持率の上昇，支持率の低下の反映と言える．その証拠に社会党は改選議席を半減させた（草野 1999: 59）．また，自民党の予想を大きく上回る敗北を喫した第18回参院選挙（1998年７月）も，その敗因としては，橋本首相の経済政策面での失敗を挙げるべきであろう（草野 1999: 62）．第16回（1992年７月）と第17回の間には，桜井環境庁長官が，第17回と第18回との間には，江藤総務庁長官が，それぞれ失言により辞任しているが，その影響が各参院選の結果に反映しているとは，ほとんど考えられない．しかしながら，衆議院と異なり，参議院出身の閣僚失言は，ほとんど事例がない．1994年の永野法務大臣の「南京大虐殺はでっち上げ」とする失言ぐらいである．その永野参議院議員にしても，失言後の選挙には，出馬していない．このような状況から，これまでの閣僚失言が，参議院比例区において，野党の支持拡大，票獲得に影響したか否か，を判断する材料も少ないことも，また事実である．

以上の考察から，衆議院比例区での自民党の得票率と当選者数の減少の事例が示すように，失言は，有権者の投票行動に影響を与える場合がある，と結論づけられるだろう．つまり，失言の政治的帰結の一つである，野党の票獲得，支持拡大という政治的機能は，その役目をわずかながら果たしていると考えられる．しかし，これは森首相の失言のみから導かれたもので，直ちに，この結論を一般化することは出来ない．

５．おわりに

本稿では，失言の政治的機能，政治的影響，そして，当該閣僚の失言による政治的責任という観点から，閣僚失言の政治的帰結を考察した．具体的には，（１）野党にとっての政権与党攻撃の「材料」，「武器」としての政治的機能，（２）失言関係国との外交関係を揺るがす政治的影響，また，（３）特に連立政権下の場合，与党内の政権基盤そのものを揺るがす政治的影響を抽出した．加えて，失言により辞任した閣僚には，その後の政治生命の中で，結果的に，次にような政治的責任が生じていることを明らかにした．

（１）閣僚への再任が無い．
（２）国会内の重要ポストへの就任が無い．
（３）自民党内における重要ポストへの就任の道が絶たれる．

しかしながら，これらは，政治家，特に国会議員としての政治生命が絶たれることを意味しない．失言により閣僚を辞任しても，ほぼ全員の当該閣僚が再選を果たしているからである．

政治的帰結の実証の試みとしては，野党の支持拡大，票獲得という機能が働いたか否か，を総選挙における得票率と当選者数の変化，そして世論調査の結果から考察した．その結果，次の結論を導いた．

衆議院中選挙区と参議院比例区では，その機能はほとんど働いていないが，衆議院比例区においては，森首相の一連の失言が，有権者の投票行動に影響を与えた．

上記の結論を補足するアンケート，インタビューによる分析と失言時と選挙時の時間空間についての議論は，後日の課題として残った．後者については，例えば，森首相の「寝ていてくれれば」の発言は，選挙直前であり，その効果，影響は増した，と考えられるからである．

注記

（１）例えば，石川真澄『戦後政治史』，田中浩『戦後日本政治史』には，1953年の吉田茂首相の「バカヤロー」発言，中曽根康弘首相の「不沈空母」発言，藤尾正行文部大臣の「侵略否定」発言，中曽根首相の「黒人差別」発言に関わる記述がある．

（２）周知の様に，戦争責任論の文脈での歴史認識研究は大量に存在する．例えば，吉田裕『日本人の戦争観』，同『現代歴史学と戦争責任』，高橋哲哉『戦後責任論』，江口圭一『日本の侵略と

日本人の戦争観』，纐纈厚『侵略戦争：歴史事実と歴史認識』，山口定「二つの現代史－歴史の新たな転換点に立って」等，枚挙の暇がない．

（3）その証拠に，外交という観点からは，政治家の失言が日中関係，日米関係にきしみを生じさせている．例えば，村田（1999: 207-209）参照．

（4）拙稿（2001: 29）の注記（2）参照．

（5）例えば，日本の政治家の失言を批判的に捉えた風刺小説とも位置づけられる，イアン・アーシーの『政・官・財の日本語塾』などもある．

（6）政治と言語に関わる文献の一覧はKawano & Matsuo（2000: 25-29）を参照．

（7）詳しくは，拙稿（2001: 23-24）参照

（8）例えば，1988年12月，宮沢喜一副総理・蔵相はリクルート問題で辞任したが，1991年には首相に，1998年以降の小渕内閣，森内閣で蔵相，財務相に就任している．また，1991年に証券・金融不祥事で辞任した橋本龍太郎蔵相もその後，首相になっている．

（9）このあたりの政治状況については，草野（1999），大嶽（1999）を参照．

（10）この呼称については，中井（1999: 88-89）に従った．

（11）全国の有権者から選挙人名簿で2000人を選び，電話番号の判明した1543人に電話し，1150人から回答を得た．対象者の選び方は層化無作為二段抽出法．回答者の内訳は，男性54%，女性46%．（『朝日新聞』2000年５月30日）

（12）蒲島は，「バッファー・プレイヤー」の定義を「基本的に自民党の政権担当能力を支持しているが，政局は与野党伯仲がよいと考えて投票する有権者」とする（蒲島 1998: 194）．また，「バッファー・プレイヤー」は，特に男性，30～40歳代，大卒，管理職，専門・技術・事務職，そして，都市住居者に多い，と指摘する（蒲島 1998: 219）．

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Abstract

Political Outcomes of the Slips of the Tongue of the Ministers and their Empirical Validation: An Analysis of the Result of a National Election

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There are two aims of this paper. The first purpose is to explore major political outcomes brought about by slips of the tongue of the ministers in Japan. The other is to attempt at their empirical demonstration. As far as we know, few earlier studies in political language have attempted an actual validation of alleged effects of political language.

The present paper shows political functions, political effects and political responsibilities of slips of the tongue of the ministers in Japan. Three major political functions and effects are a point of attack against the Government parties by the oppositions, cause of a split in the diplomatic relations between Japan and the countries concerned, destabilization of the foundation of coalition government. These three political functions or influences can be found in most cases of slips of the tongue of the ministers. This paper also clarifies the political responsibilities of the ministers concerned. The ministers in question have never been appointed to posts of minister or to important posts in the Diet or LDP once they resigned from the ministerial position because of the slip of the tongue. They have, however, never lost their positions as a member of the Diet. This is because slips of the tongue have little effect on the elections of the ministers.

Why do the opposition parties use these slips of the tongue as an object of attack against the Government parties? Support expansion and vote acquisition will be plausible answers. This paper attempts to show whether these two functions work or not. For this purpose, it discusses the result of a national election, especially the rates of votes and the number of elected persons, of the House of Representatives. The result shows that the political functions of support expansion and vote acquisition work hardly in the medium and small electoral districts. However, Prime Minister Yoshiro Mori's verbal missteps have a considerable effect on the election of proportional representation.

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【原著論文】

日韓両言語における諺の対照比較研究
―男性観と女性観を巡って―

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１．はじめに

諺は長い歳月に渡って民衆の口から口へと言い伝えられてきたものであるため，中にはその民族の生活様式をはじめ，思考様式や言語様式などを反映したものが豊富に含まれている．従って，異民族の諺の研究及び対照研究は異文化間における相互理解のための最も良い手がかりとなるものとも言える．

日韓両国における現存する諺は，韓国の場合は朝鮮時代のものが，日本の場合は近世，特に江戸時代のものが主流を成していることから，両国の諺の中には当時の人間像及び生活像が窺えるものが豊富に含まれていると思われる．

さて，本稿は，諺が様々な人間関係の下で形成されたものという点に焦点を当てて，その中でも特に，男女に関する諺の表現を研究の対象とし，そこから見られる男性観と女性観の特徴を明らかにすることを目的とする．諺はそれが使われていた当時の民衆意識を鏡のように映す言語の媒体と言うならば，それを通して当時の男女に対する認識，つまり男性観と女性観をはじめ，男女の地位関係をも明らかにすることができると思われる．

日韓両国における諺の対照研究のうち，男性と女性に関する諺を対象とした先行研究（李乙順(1982)，金明姫（1989)，金周光（1993)，崔聖坤(1995)，安美貞（1998)）は，韓国の学者によるものがいくつか見られる程度にとどまっている．これらの先行研究は，主に表現上の意味内容による女性観の比較にとどまっており，類似の女性観だけを強調している傾向が強いため，両国における女性観の特徴を明らかにしたと言えるようなものは見受けられない．さらに，両国における女性観の特徴を明らかにするためには男性観に対する考察も欠かせないものと思われるが，いずれも女性観だけをもって女性の地位の様相を論じている．

そこで，筆者は両国の諺の中から男女に関する表現の全てを取り出し，そこに見られる男女観に対する分析考察を試みることにする．特に，ここでは男女に対する認識という側面に焦点を当てて論を進める．

研究の方法としては，両国の諺辞典（韓国の方は『俗談辞典』(李基文　1980)，日本の方は『故事ことわざの辞典』(尚学図書　1986)）[(1)] から，まず，女性と男性に関連する用例表現を抽出し，そのうち，女性と男性に対する認識が含まれている表現のみを本稿の対象と用いることにする．この際には中国の出典を持つ表現は省く．本稿で扱う諺総数は韓国の場合は総178用例（男：75／女：103）であり，日本の場合は総185用例（男：71／女：114）である．なお，女性と男性に対する認識の様相は男女別に取り分け，両国の共通の認識と相違の認識とに細分したものを表にまとめることにする．

広島大学大学院国際協力研究科『国際協力研究誌』第8巻第1号，2001年，pp. 33–50

2．両言語の諺に見られる男性観の特徴

2．1　男性に対する共通の認識

両言語の諺に共通に見られる男性に対する様々な認識の様相は，大きく男性の属性と男性が備えるべき性質及び行動（振る舞い）とに二つの項目に取り分けることができ，それをまとめたものが次の表1である．

2．1．1　　共通に見られる男性の属性

（1）道楽を好むもの

両国とも男性はそもそも女色，酒，博打を好むものだと強調しているものが目立つ．

日）煎り豆と小娘は傍にあると手が出る
　　酒と女と博打には錠おろせ
　　色と欲と酒とは敵としるべし

韓）물 본 기러기 산 넘어가랴（水を見つけた雁が山を越えて行くもんか）
　　볶은 콩과 젊은 여자는 곁에 있으면 그저 안 둔다
　　（煎り豆と若い女は傍にいるとほうっておかない）
　　노름은 본전에 망한다
　　（博打は元手で滅びる）
　　성급한 놈 술값 먼저 낸다
　　（慌てる奴が酒代を先に払う）

中には特に，男性の女色を好む属性を示したものが最も多く，道楽に溺れている男性に対する戒めを表したものも見られる．

上記に見られる日本の「煎り豆と小娘は傍にあると手が出る」と韓国の「볶은 콩과 젊은 여자는 곁에 있으면 그저 안 둔다（煎り豆と若い女は

表1　共通の認識の諸相（（　）内は各項目別用例数）

	日本の諺（男性の諺総数（71））		韓国の諺（男性の諺総数（75））	
	認識の内容の項目	用例数	認識の内容の項目	用例数
属性	女郎買いに対する警告（7） 女色を好むもの（5） 女色・酒〈好評〉（1） 色を好まない男への嘲弄（1） 女の誘惑に応じない男は恥（1） 色・欲・酒好む男に警告（2） 酒・女・博打の男に警告（1）	18	女色を好むもの（8） 博打をするもの（2） 男の博打への警告（3）	14
	男は外のもの（7） 農作業の担い手（1）	8	男は外のもの（5） 農作業の担い手（4）	9
	妾を囲うもの	3	妾を囲うもの	7
	金は男の必需品	2	金は男の必需品	5
	体面を重んじるもの	2	体面を重んじるもの	2
	家長の絶対的権力	2	家長の絶対的権力	2
	教育を受けるもの	1	教育を受けるもの（4） 学識の足りない男への嘲弄（2）	6
小計	7項目	36	7項目	45
性質及び行動	度胸のあるもの（7） 決断力を備えるべき（1）	8	度胸を持つこと（1） 決断力を備えるべき（1）	2
	無口のもの（3） 妻子を自慢する男への嘲弄（1）	4	口のうるさい男への嘲弄（1） 妻子を自慢する男への嘲弄（1）	2
	慌てる男への嘲弄	4	慌てる男への嘲弄	1
	知恵を回すべき	2	愚かな男はいけない	3
	家長は勤勉で誠実であるべき	1	怠け男への嘲弄	3
	謙遜であるべき	1	謙遜でない男への嘲弄	1
小計	6項目	20	6項目	12
総計	13項目	56	13項目	57

傍にいるとほうっておかない)」は，表現の仕方においても非常に酷似しており，男性の女色を好む属性をユニークな表現をもって描写しているが，このような表現はあくまでも主従的な線上に置かれている男女間の地位の分化様相をよく示しているものとして捉えられる．

（2）男性は外のもの

1）男性の役割領域及び役割

両国とも男性の主たる役割領域は外であることを強調している傾向が見られる．

日）色男より稼ぎ男
男は内を言わず，女は外を言わず
田植え女に秋男

韓）남자는 두레박 여자는 항아리
(男は釣瓶，女は壷)
안인심이 좋아야 바깥양반 출입이 크다
(女房が手厚くもてなしすれば，夫の出入りが活発になる)
쟁기질 못하는 놈이 소 탓한다
(犂で耕せない奴が牛のせいにする)

まず，男性の役割領域に関しては，男性はあくまでも外への出入りが自由自在で，労働活動の主たる場が外であるため，男性の出世とはあくまでも社会的な出世を意味するとともにそうした男性の出世に欠かせないものが女性の内助だという認識が反映されている．言い換えれば，一家を支えていく主体的な人物は男性であり，その男性の陰の下で内助者の役割を果すべき人物がほかならぬ女性であることを強調している．

日本の諺の中には「男子家を出ずれば七人の敵あり」「早食い早糞は男子の一芸」のような，男性の社会活動の活発な働きぶりや社会生活に対する苦悩を強調したものも見られるが，男女の性役割領域を両分しようとする認識は韓国の諺に一層強く示されている．

次に，諺に見られる男性の主たる労働活動の内容に関しては，両国とも男性が農作業においての主な担い手であったことを示唆するものが見られており，韓国の諺には「노루 본 놈이 그물 질머진다（獐を見た奴が網を担ぐ)」のような，男性の労働活動の具体的な内容を示唆するものも含まれている．

2）男性の必需品

日）a．うるだく男は金にならない
金の無い男と頭の無い女
b．手書くは男の表道具

韓）a．없으면 제 아비 제사도 못 지낸다
(貧しければ自分の親父の祭祀も行えない)
가진 돈이 없으면 망건꼴이 나쁘다
(持っている金が無いと網巾[2]の格好が悪い)
b．글 못한 놈 붓 고른다
(字の書けない奴が筆を選ぶ)
게으른 년이 삼가래 세고 게으른 놈이 책장 센다
(怠け女が麻の糸を数え，怠け男が本をめくる)

男性に欠かせないものとしては次の二つの要素を提示している．

その一つは財力であり，諺の中では金の持っていない男性を嘲る形をもって現れる．女性をものにするためにも，馬鹿にされないためにも，必ず備えていなければならないものは金だという認識が強く，金銭に異常にこだわりを持っている男性の姿が描かれている．

もう一つの要素としては学識を挙げている．これは男尊女卑の性差別意識に基づく教育観を反映したものと言える．このような認識は日本の「男の子は餅で育て，女の子は下げて育て」「嫁は手を見て貰え」や韓国の「사내는 책이요 여자는 거울이다（男は本で，女は鏡だ)」「사위는 글방에서 얻고 며느리는 부엌에서 얻으랬다（婿は書斎から貰い，嫁は台所から貰う)」のような表現にも明白に現れている．つまり，男性には学問的知識の習得を求めているのに対し，女性には学問的知識を言及している個所は一切見られず，むしろ家事のやりくりに関する訓練を求めている個所が多く見られるだけである．

3）妾を囲うもの

妾を囲うことは男性の女色を好む属性と脈絡をともにするものとも思われるが，両国の諺の中に

妾に対する表現が登場しているのは両国社会があくまでも男性中心社会であったことを裏付ける良い証拠と捉えることができる．

ところが，ここで一つ注意しなければならないことは，妾はあくまでも財力のある権力者の所有物にすぎなかった点である．妻妾生活を営む男性の姿を表している両国の諺は「高家の妻は七人半の宛い」や「아주까릿대에 개똥참외 달리듯（唐胡麻の茎にまくわ瓜が付いているよう）」「양첩한 놈 때 굶는다（両妾している奴は飢える）」のような形をもって現れており，特に，韓国の諺の場合は妾を囲う男性を嘲る形の表現が主を成している．これはおそらく妾を囲うことが容易ではなかった庶民の男性たちの支配層への羨ましさを逆説的に表現したものと捉えることもできると思われる．

2．1．2　男性が備えるべき性質及び行動

男性に求められている理想的性格及び行動（振る舞い）としては，知恵，勤勉，無口，慎重，度胸及び決断力等々が提示されている．

（1）無口であることが大事
　日）一の馬鹿子を褒める二の馬鹿嬶褒める
　　何も構わぬ男の口
　韓）온통으로 생긴 놈 계집 자랑 반편으로 생긴 놈 자식 자랑
　　（丸ごと馬鹿女房を褒める片っ方馬鹿子を褒める）
　　좁쌀영감（粟爺）(3)

上記の表現は，男性は口が重くて，ぶつぶつ言わない方が良いという認識を示しているもので，理想的男性観の一つとして無口であることを求めていることがわかる．中には，特に「온통으로 생긴 놈 계집 자랑 반편으로 생긴 놈 자식 자랑（丸ごと馬鹿女房を褒める片っ方馬鹿子を褒める）」と「一の馬鹿子を褒める二の馬鹿嬶褒める」のような，人の前で妻子のことを自慢する男性をからかっている内容を示す表現も含まれており，これは無口であることを男らしい行動と規定しているものでもあれば，同時に女性と子供を男性の付属物と捉えている認識を表したものでもあると言える．表現の仕方においては非常に酷似しているものの，内容の意味合いにおいては微妙な違いが見られることが指摘される．つまり，韓国の諺には妻より子を優先する意識構造を反映しており，これを通して韓国社会における女性の地位様相の一面を窺い知ることができる．

2．2　共通の認識に現れる微妙な相違点

（1）女色を好む属性

日本の諺の中には「浮世は色と酒」「色好まぬ男は玉の杯底無きが如し」「据え膳食わぬは男の恥」のような，男性が女色を好むことは極めて当たり前のことであり，むしろ女色を好まない，もしくは女性の誘惑に応じないことを男の恥のように捉えており，そのような男性がからかわれる局面に処する様相を表しているものが含まれている．なお，これらの表現と関連するものとして「傾城買いの草鞋履かず」「傾城と辻風には会わぬが秘密」のような，男性の女郎買いを示唆する表現も相当見られる．このように，日本の諺の方に男性の女色を好む行為を合理化する表現や男性の女郎買いに対する表現がとりわけ多く現れているのは近代の公娼制度の土台を成したと言われている近世遊郭の発達と密接な関わりを持つものと考えられる．つまり，女郎による売買春が体系的な商売という形をもって庶民社会にまで広められていた当時の社会的背景に起因し，女性を性的欲望の対象物と見なす認識が日本社会全般にかけて広められていたことをよく物語っているものとも言える．

江戸の遊里は庶民の趣味の社交場となり，通人・粋客がもてはやされる時代となり，そうした推移の原因は，江戸市中の町屋の著しい発展とともに町人の経済文化の発達，それに伴う特権商人などの出現等からだった（中野　1967）という見解や「日本には昔から男性にとっての性的な美や快楽は，それを職業とする女性たちによって埋められていくという伝統的な性意識が存在する」（平野　1984）という見解からも窺えるように，日本社会においての男性の性的な道楽行為とは，庶民社会にまで一般化されていたことがわかる．

これに対し，日本の女郎に相当する韓国の“妓生”とは貴族の奴隷として存在していたため，一般庶民の男性たちにとっては縁のないものであっ

た．従って，韓国の庶民社会においての男性の性的な道楽生活とは日本とは確かに違うところがあったと言えるであろう．

（2）男性の必需品としての金銭

日本の諺の中には「釜より先に女房」「早く産を求めて遅く妻を娶れ」という表現が見られ，財力は妻を迎えるための必需要件として働くものだという認識が現れている．これらの認識は特に町人社会の商家における男性生活の慣行に基づくものと捉えることもできる．

中野（1967）によれば，商家には主従その他の階級的制度や慣行の厳しいものがあった．たとえば，商家では丁稚から手代となり，番頭となってはじめて女房をもらい世帯が持てたのである．商家に勤めて女房をもらうまでになるにはだいたいは四十歳を過ぎるのであると述べている．

近世，特に江戸時代には町人の経済文化が発達していた時期でもあったことから，諺の表現の中には町人社会の生活像を反映したものが多く含まれていることも看過できない．

2．3　男性に対する相違な認識

男性に対する相違な認識は，既述した両国共通の認識に比べて認識の内容の多様性においては少し欠けているものの，両国における男性観の特徴的面目を一見してみることのできる有効なものとしても捉えられる．

2．3．1　男性の属性に対する相違な認識

（1）日本の諺

a．箸に目鼻を付けても男は男
藁で束ねても男は男
男は裸百貫

b．秋の空と男の心は七度変わる
男の心と川の瀬は一夜に変わる

c．男三十ちょろちょろ子供，
女二十でお婆さん
男の四十歳はちょろちょろわっぱ

上記のaの表現は男性の値打ちに対する評価を表しているもので，これは日本の諺に見られる独自の認識の中で，最も多く見られるものでもある．どんなにつまらない男でも男である限りでは値打ちがあり，ましては裸の男，つまり無一物の男でも働いて財産をつくることができる能力者と見なしている傾向が著しく見られる．

その他，bのような，男性の移り気性を表したものやcのような，男性は子供のような気質を持つものと見なしているものも含まれている．女性を変わりやすいものとみなす認識とは両国共通に見られるものであるのに対し，男性を変わりやすいものとみなす認識とは日本の諺にしか見られない独自のものとして捉えられる．

表2　相違な認識の諸相（（　）内は各項目別用例数）

	日本の諺（男性の諺総数（71））		韓国の諺（男性の諺総数（75））	
	認識の内容の項目	用例数	認識の内容の項目	用例数
属性	値打ちの高いもの	5	祭祀の重要な担い手	10
	変わりやすいもの	2	性不能の男への嘲弄	2
	子供気質のあるもの	2		
小計	3項目	9	2項目	12
性質及び行動	笑ってはいけない（3） 泣いてはいけない（1）	4	妻の実家の厄介暮らしはいけない	2
	実直な男が望ましい	1	安易な考えを持っている男への嘲弄	1
	礼儀を持つべき	1	人のせいにする男への嘲弄	1
			粗忽な男への嘲弄	1
			卑怯な男はいけない（勧告）	1
小計	3項目	6	5項目	6
総計	6項目	15	7項目	18

（2）韓国の諺

a．나갔던 상주 젯상 엎지른다
（家出した喪主，祭祀のお膳をひっくり返す）
처삼촌 뫼에 벌초하듯 의붓딸의 새남하듯（妻の叔父の墓の草刈りをするように，死んだ継子のセナン[4]をするように）
없으면 제 아비 제사도 못 지낸다（お金がなければ親父の祭祀さえ行えない）
b．고자 초가집 가듯
（性不能の男が妻の実家に行くよう）
사위 좇 보니 외손자 볼까 싶지 않다
（婿の金玉をみたところ，外孫がもうけられそうもない）

韓国の諺の中には上記のaのような，祭祀に関する表現が多く見られる．男性は家内で行われる祭祀のみならず，墓参りをはじめ，墓の草刈り，霊魂を慰める儀式等々，いわゆる儒教に基づく葬礼及び祭礼に関するあらゆる活動においての主役をつとめる存在として描かれている．

なお，bの表現は子孫をもうけることが重んじられていたことを示唆するものとして捉えられるが，いずれも性不能の男性をからかう形をもって現れている．これはおそらく同性の男性からの嘲弄でもあれば，子供が産めない娘を心配している母親の婿に対する嘲弄でもあると言える．

これらの表現は特に，韓国社会における家父長制の特徴をよく反映したものとも捉えることができる．

李（1994）は「我が国の場合，祭祀権を継承し，祖先への祭祀が途絶えないようにするのが孝の中の孝と考える．血縁者によって祭祀を持続させることが我が国の家族イデオロギーと言える」と，韓国社会の家父長制においての祭祀権の占める位置を述べており，かつ日韓両国における家継承形態の特徴をよく説明しているが，その主な内容をまとめると以下の通りである．

家継承の主な内容となる財産権，家督権，祭祀権の相続においては，まず，韓国社会の場合は父親から嫡長子へと継がれていく祭祀権の継承が最も重んじられる中で，家督権と財産権はそれに付き従う形を取っている．つまり，韓国社会においての家長権とは儒教祭祀を行うことによって成り立つものであり，この祭祀というのは父から嫡長子へと繋がるものとなっている．従って，韓国社会においての家継承とはあくまでも父系血統による姓氏継承という特徴を持つものであるため，庶子による家継承も認められず，ひたすら嫡子に限って，その権限が与えられていたのである．これに対し，日本社会の場合は家督権が最も重んじられる中で，祭祀権や財産権はそれに伴う形を取っており，息子のいない家では平気で非血統者を養子として迎えることや婿を養子として迎えて家を継がせること，つまり，娘を通して家を継承させる形態も一般的に行われていた社会であるため，日本社会の家父長制における家長権とは韓国の家父長社会における家長権に比べ，それほど強いものではなかったと言えよう．

2．3．2　男性が備えるべき性質及び行動

（1）日本の諺

日本の諺には，男性に威厳を保つことを戒めているものが多く，かつ実直と礼儀を備えることを勧告するものも現れる．

a．男は三年に一度笑う
男は三日に一遍笑えば良し
男の子育てる時は白歯見せるな
b．男は生まれた時と親の死んだ時の外には泣かぬ

aの表現は，いずれも男性に対して軽はずみに笑わないことを勧告する内容を含むものである．中には男性は一家を支える責任があるため，笑う暇はないという認識や男の子を育てるには笑う姿をめったに見せないのがコツだという認識が示されている．

なお，bの表現のように，男性は些細なことで泣いてはいけないと戒めているものも現れている．

これらの表現の根底には男らしい男とは，感情に振り回されることのない強い存在でなければならないという認識が強く潜んでいると言える．

（2）韓国の諺

韓国の諺の中には，妻の実家の厄介暮らしに対する否定的認識を示したものをはじめ，積極的な思考を持つこと，自分の過ちに対しては素直に認めること，よく我慢すること，勇敢であることなどを求めているものが見られる．

ここでは，そのうち最も多く見られる妻の実家の厄介暮らしに対して少し触れてみることにする．

a．겉보리 서말이면 처가살이 하랴
（殻麦三斗さえあれば妻の実家の厄介暮らしをするもんか）
b．처가살이 삼년이면 아이들도 외탁한다
（妻の実家の厄介暮らし三年だと子供たちも母方に似ていく）

a の表現は僅かな量の食糧さえあれば，妻の実家の厄介暮らしはするものではないという認識を反映しているものであり，b の表現は妻の実家で暮らしたら，自分の実家の風習を学ぶべき子供が母方の風習に馴染み込まれて行くことを心配する男性の姿が窺えるものである．いずれも妻の実家の厄介暮らしに対する否定的認識を示していることがわかる．

家長権が莫大な権限を持っていた家父長制社会の雰囲気の中で，男性が妻の実家で暮らすことは確かに恥ずかしいことで，からかわれることと扱われていたことが指摘できる．

韓国の古代社会では女性の地位が割りと高く，息子と同様な役割を果していた存在であったため，男性が妻の実家で過ごすことが全般的に多く，子供が大きく成長するとはじめて，妻子を連れて実家の方に戻るという婚姻形態が多かった．ところが，朝鮮の建国とともに，男性が妻の実家の厄介暮らしをすることは儒教の原理，いわゆる陰（女性）が陽（男性）に従う陰陽の原理に違反するものだという声が高まるようになり，男性の実家で式を挙げた後，そのまま一生を夫の実家で暮らすという形を取っていた中国の親迎制の実施が強く求められる．ところが，長い間にわたって受け継がれてきた婚姻風習であったため，完全な実行はなかなか成されず，18 世紀以降になってやっと一般化されるようになる．それでも完全な形としての親迎制の実施ではなく，式を女性の家で挙げた後，男性は自分の実家へ戻り，女性はそのまま自分の実家でしばらく過ごしてから男性が迎えに来るとはじめて夫の実家に行って一生を過ごすという，いわゆる半親迎制の形をもって確立される．式を女性の方で挙げ，新婚旅行から戻って来るとまず，女性の実家で一晩泊まり，翌日には男性の実家の方に行くという段取りで行われる現代の婚姻形態はこの半親迎制の残有物であると言える（ゴォン　1999）．

3．両言語の諺に見られる女性観の特徴

3．1　女性に対する共通の認識の諸相

両言語の諺の中には，女性に関する表現が男性に関する表現より一層多く現れることから女性に対する認識の様相もより多様な形態をもって現れる．

3．1．1　女性の属性に対する共通の認識

女性が持つ共通の属性と見なされているものはおよそ 11 項目に至る．女性の属性に対する評価とは相当低いもので，女性に対する蔑視意識が強く働いている．例えば，女性は男性の付属物であると同時に男性の性的欲望の対象物と見なしているものもあれば，お喋りもの，陰険なもの，嫉妬深いもの，変わりやすいものと見なしているものもある．一方，女性に関する表現の全般を通して女性の属性に対する肯定的認識を示しているものはめったに見受けられない．

ここでは，両国共通に見られる女性の属性に対する認識のうち，特記すべきものだけに絞って論を進めることにする．

（1）存在価値に対する共通の認識

1）男性の付属物及び従属物

女性の存在価値を示す表現のうち，最も多く見られる事柄と言える．つまり，女性は一人では立てない弱い存在であるため，男性に依存して一生を過ごさなければならないという認識に基づいているものとなっている．

日）男は松，女は藤
　　妻は夫の譜代の臣
　　おなごは男同士
　　女に七去あり
　　嫁しては夫に従う
　　おなごには五章三従あり
韓）죽어도 시집 울타리 밑에서 죽어라
　　（死しても夫の実家の垣下で死ね）
　　여편네 팔자는 뒤웅박 팔자라
　　（女の運命は瓢の運命だ）
　　며느리는 종신식구（嫁は終身食口）
　　죽으면 시집귀신된다
　　（死んだら夫の実家の鬼神になる）

これらの表現の現れはおそらく儒教の影響と無縁ではあるまい．

女性に最も強調されている儒教の教えとは「三従之教」で，これは，女性は幼い頃には父に従い，

表３　共通の認識の諸相（（　）内は各項目別用例数）

	日本の諺（女性の諺総数（114））		韓国の諺（女性の諺総数（103））	
	認識の内容の項目	用例数	認識の内容の項目	用例数
属性	家事の担い手（４） 家庭内の重要な存在（４） 外出の不自由示唆（２） 育児の担い手（１） 農作業への参加示唆（２）	13	台所仕事の担当者（７） 家事の担い手（２） 外出の不自由なもの（２） 育児の担い手（１） 農事への参加示唆（２）	14
	付属物及び従属物（10） ＜仏教（１）／儒教（４）＞ 男の慰みもの（１） 依存するもの（２）	13	付属物及び従属物（７） 男の慰みもの（１）	8
	嫉妬深いもの（８） ある程度の嫉妬はよい（２） 男を操縦する絶好の道具（１）	11	嫉妬深いもの（３）	3
	賢い女への蔑視（１） 女の知恵への蔑視（７） 妻の意見は影響力の大きいもの（２）	10	賢い女への蔑視（１） 愚鈍な女がよく働く（１） 女の意見は当てにならない（２）	4
	お喋り（６） 口の軽いもの（２）	8	お喋り（４） お喋り女への嘲弄（４） 口の軽いもの（３）	11
	陰険なもの	7	陰険なもの	5
	性的嘲弄の対象物（７） ＜若い未婚の女性が対象（６）＞	7	性的嘲弄の対象物 （対象は未婚の若い女性）	4
	変わりやすいもの	3	変わりやすいもの	1
	物扱い	4	物扱い	1
	力の弱いもの	2	力の弱いもの	1
	狡賢い存在	1	狡賢い存在	2
小計	11項目	79	11項目	54
性質及び行動	貞節を勧告（２） 品行の堅いことを勧告（１） 品行は崩れやすいもの（１）	4	女性の貞節 ＜不貞な女への皮肉（６） 貞節な女でいることを勧告（２） 間男をすること最大の罪（３） 貞淑な女を選好（１） 品行は崩れやすいもの（１）＞	13
	出産	3	出産（10） 不妊の女性への嘲弄（１）	11
	気の強い女への嘲弄（１） 言い張る女への嘲弄（１）	2	おとなしい女であることを勧告（１） 言い張る女への嘲弄（１）	2
	糟糠の妻の大事さ	2	糟糠の妻の大事さ	1
小計	4項目	11	4項目	27
総計	15項目	90	15項目	81

嫁してからは夫に従い，夫が亡くなってからは息子に従わなければならないという内容を含むものである．

上記の表現はいずれも女性は一生を男性に寄りすがるものだという認識に基づいているものとして捉えられる．特に，韓国の諺には女性の運命は一生を通して男性に従属され，しかも，そのような運命は死んでからも続くものとみなす認識が示されている．

日本の諺には「三従之道」の教えの中でも，夫に従うこと，つまり夫に服従することを女性に呼びかけているものがとりわけ多く含まれている．後述するが，日本の諺の中には，家庭内における女性の意見が相当強く発揮されていたことを示唆する表現が見られる．従って，日本の諺の中に夫への服従を強調した表現は，ある意味では夫に向かい合って自分の意見を強く押し通せようとする妻に対する夫の願望を表しているものと捉えることもできるのであろう．

2）男性の性的欲望の対象物

日）女と白魚は子持ちになっては食えない
　　姉さん股ぐら金箱だ
　　煎り豆と小娘は傍にあると手が出る
　　梨と女は尻ねらい

韓）처녀 젖가슴 만지듯
　　(処女の胸を触るように)
　　돈만 있으면 처녀불알도 산다
　　(金さえあれば，処女の金玉も買える)
　　복 없는 가시나가 봉놋방에 가 누워도 고자 곁에 가 눕는다
　　(運のついてない女は下僕の居所へ行っても，性不能の男の傍に行って横になる)

女性を男性の性的欲望の対象物及び慰みものとみなしているものもかなり多く見られる．

上記の表現は，前述した男性の女色を好む属性とも関連するものと言えるが，ここでは男性の女性に対する性的嘲弄の具体的様相が描かれており，いずれも女性がいかに劣等な立場に置かされていたかを如実に反映したものと捉えることができる．

男性の性的欲望の対象としては，特に若い未婚の女性が狙われている傾向が見られており，それは正月を過ぎた時期の大根は味が良くないという意味を含む韓国の「설 쇤 무우（正月を過ごした大根)」や粗悪な茶でも出しはじめはうまいという意味を含む日本の「山茶も出花」のような表現にも明白に現れている．

（2）生まれつきの属性に対する評価

1）お喋り及び口の軽いもの

口を慎むことを戒めるものは男女共通に見られるが，女性に対してはお喋りを生まれつきの属性と見なし，あざけて言う形を取っている．単に口を慎むことを戒めるのにとどまっている男性の場合とは大分違う様相を見せていると言える．

女性はそもそもお喋りものであることを嘲る口調で強調しているものもあれば，女性に言ったものはすぐ漏れてしまう恐れがあるため，口を慎むべきだと，男性に警戒を呼びかけているものも含まれている．

2）嫉妬深いもの

女性は嫉妬心が強いものと見なされている．

女性が嫉妬深い存在であることは両国共通に見られる認識と言えるものの，女性の嫉妬に対する評価に関しては多少の相違点が指摘される．つまり，韓国の諺の場合はひたすら否定的視角でしか捉えていないのに対し，日本の諺の場合は肯定的視角で捉えているものも現れているのである．これについては，3．2　で後述することにする．

日）女は嫉妬に大事を漏らす
　　嫉妬は女の慎み

韓）먹지 않는 종 투기 없는 아내
　　(食べない下僕に嫉妬のない妻)
　　삼십리 강짜（三十里妬み）

両国とも嫉妬は女性の所有物のように扱われており，そのような女性の嫉妬深い属性に対しては嘲る形をもって表現していることが分かる．

上記の諺はいずれも，女性の嫉妬に対する否定的認識を表しているものであり，中には女性の嫉妬に対し，程々にして欲しいという男性の願望が潜んでいるものも見られる．

かつて女性が男性の所有物ではなかった原始時代の母権中心社会においては，男性の方がむしろ嫉妬深いものであったと言われている（李　1991)．

このような観点からみると，嫉妬を女性の属性と見なす認識はおそらく父系中心社会に変わるにつれて芽生えてきたものと捉えることができる．

3）陰険なもの

女性は常に何かを企んでいるものであり，かつ騒動や問題を引き起こす元となるものだという認識とともに，女性が恨みを抱くと大変恐ろしいことが起こるため，用心しなければならないと，男性に警戒を呼びかけているような表現も含まれている．例えば，韓国の「계집은 상을 들고 문지방을 넘으며 열두가지 생각을 한다（女はお膳を持って敷居を跨ぎながらも十二企む）」「계집의 곡한 마음 오뉴월에 서리친다（女の恨みは五・六月に霜を降らせる）」と日本の「女は敷居を跨ぎながらも七十企み」「七人の子はなすとも女に心許すな」「女の仕返しは三層塔」のような表現がそれをよく表しており，表現の仕方においても非常に類似していることが分かる．

その他，日本の諺の中には女性を陰険なものとみなす仏教の女性観を示しているものが特徴的に現れるが，それについては，3．2で後述することにする．

4）愚かなもの

そもそも女の知恵は浅はかなものであり，かつ女がいくら賢くても何の当てにもならないという認識が示されている．

日）女の猿知恵
　　女の鼻先思案
韓）여자는 서발 앞도 못 본다
　　（女は三歩前も見ることができない）

特に，韓国の諺には「숟길 한단 못 세는 사람이 살림은 잘 한다（匙の一束を数えられないものこそ家事のやりくりが上手だ）」のような，賢い女性よりはむしろ，少し愚鈍な女性の方が家事のやりくりが上手だという意味を表しているものが登場する．これは，女性が賢すぎると自己主張が強くなるだけであるため，少し愚鈍な女性の方が扱いやすいという認識の上で成り立っていると言える．

5）その他

①狡賢いもの

日）狸は入道，狐は女
韓）여자는 사흘을 안때리면 여우가 된다
　　（女は三日に一回殴らないと狐になる）
　　계집이 늙으면 여우가 된다
　　（女が年を取ると狐になる）

②変わりやすいもの

日）女の心は猫の眼
　　女心は秋の空
韓）천길 물속은 알아도 계집 마음 속은 모른다（千尋の水底はわかっても女心はわからない）

③弱いもの

日）女の力と首のない石仏
韓）계집의 매도 너무 맞으면 아프다
　　（女の鞭でも打たれすぎたら痛い）

上記の①～③の表現は，女性はそもそも狡賢い性質の持ち主であり，心がよく変わるため，到底予想のつかないものだという認識とともに，かつ力の弱いものでもあるため，当てにならないという認識を示したものである．

女性の狡賢い属性に対しては，韓国の方がより敏感に捉えており，男性の暴力を女性に対するしつけの手段として合理化している傾向が窺えるものさえ現れる．女性に対する男性の暴力を示唆する表現は韓国の諺に見られる独自のものであり，他にも「북어와 계집은 때려야 부드러워진다（乾し明太と女は叩けば柔らかくなる）」のようなものが見られる．

（3）内のもの

1）女性の役割領域

諺の中に見られる女性の主な役割領域は家庭内と強調されているが，時には家庭内に限らず，外での活動を示唆する表現も現れている．支配層における女性たちの活動領域とは家庭内と厳格に統制されていたものの，庶民層の女性たちにおいては，家事をはじめとする家族の衣食住全般にかけての仕事を担わなければならない状況に置かれていたため，諺の中には女性の様々な労働活動の範囲が窺えるものが多く見られる．

日）男は内を言わず，女は外を言わず
　女房は台所から貰え
　田植え女に秋男
韓）부뚜막 땜질 못하는 며느리 이마의 털만 뽑는다
　（竈の修理もできない嫁のくせに額の毛ばかり抜く）
　이웃집 새 처녀도 내 정지에 들여 세워 보아야 한다
　（隣の娘も私の台所に入れて立たせてみなければならない）
　가을에 밭에 가면 가난한 친정에 가는 것보다 낫다
　（秋の畑に出れば貧しい実家へ行くよりましだ）

女性の主たる活動領域としては台所を多く挙げており，嫁を貰う際には台所の仕事をいかによくやり切れるかに重点を置いて選ぶべきだという認識を強く示している．これらの表現は，いずれも女性の主たる労働活動の領域は家庭内であり，かつ家事のやりくりに対する能力が女性の値打ちを決める最も重要な要件として働いていたことを示唆するものとして捉えられる．なお，このような認識は「여자는 제 고을 장날을 몰라야 팔자가 좋다（女は町の市の日が知らない方が良い）」「鬼と女とは人に見えぬぞ良き」のような，女性の外への出入りを規制する形の表現さえ生み出している．

その他，女性の農作業活動を示唆するものが見られる．家族単位の小農経営の形態を成していた両国の庶民社会においては，女性の労働力とは非常に重要なものであった．

ところが，韓国の諺には女性の畑仕事を示唆する表現が主を成しているのに対し，日本の諺には女性が「田植え」のような稲作にも多く参加していたことが窺えるものも現れる．

まず，日本の場合，小農経営が定着する 18 世紀後半，19 世紀の女子労働は“鍬を手に田植えをする女性”に象徴されるように苗代準備，肥入，田植え，草取，稲刈り，脱穀など田植えに集中することなく農作業の多くの局面にかかわっている．これらは女子労働が小農経営を維持，発展させるための量としての生産労働に移行した（女性学研究会　1984）．

なお，日本の諺に現れている「田植え女」と「五月女」とは陰暦五月に行われる田植えを行う早乙女のことを指すもので，これらの言葉は古くから田植えに女性が重んぜられていた風習（宮城・大井　1974）に由縁するものと言える．

これに対し，朝鮮社会においては，良民と賤民階級が生産を担当する身分で，生産様式は家族単位の小農経営であった．綿布と米穀は小農経営の基本的生産物で，衣食生活の基本材料だけではなく，国家財政を支え，支配層が富を蓄積するための基本的単位であった．綿布と米穀を生産するための性別分業においては，男性は稲作を行って米穀生産を担当する一方，女性は畑仕事を通して綿布の材料を生産し，綿布を生産した（李　1996）．

両国の諺の中に見られる女性の農作業活動に関する相違点はおそらく上記のような社会的背景の違いに起因するものと思われると同時に，これらの表現を通して男女の性役割分担意識とは韓国の方により強く働いていたことが窺える．

2）重要な役割内容

①家庭内における重要な労働力

前述したように，女性は家事の重要な担い手という認識が最も強調されている．

日）家は夏向き，女房は所帯向き
　稼ぎ男に繰り女
　女房は半身上
韓）남편은 두레박 아내는 항아리
　（夫は釣瓶，妻は壷）

この他，日本の諺の中には「師走女に目なかけそ」「師走女の化粧には山の神も怖がる」「節季女に盆坊主」のような表現も見られ，女性が様々な労働活動に従事していたことが窺い知ることができる．

②子の出産と育児の担い手

女性のもう一つの重要な役目としては，子を産むことや育児を担当することが示されている．

日）産は女の大厄
　産は女の大役

男には家作らせ，女には子を持たせれ
韓）아이 못 낳는 년이 밤마다 용 꿈꾼다
（子の産めないめろうが毎晩龍の夢を見る）
불도 켤데 켜야 아들도 낳고 딸도 낳는다
（灯もつける時につけてこそ男の子も女の子も産める）
자식 기르는 것 배우고 시집가는 계집 없다
（育児を学んで嫁に行く女はいない）

両国とも子を産むことを女性の任務とみなしており，しかも，男の子を産むことが強く求められていたことが「七日小腹を病んでも男の子を生め」や「아이 못 낳는 년이 밤마다 용 꿈꾼다（子の産めないめろうが毎晩龍の夢を見る）」のような表現に反映されている．男の子を生むことは女性の家庭内における地位を急上昇させるきっかけとなるものだという認識が込められている表現も見られており，日本の「金碇を下ろす」と韓国の「아이 밴 나를 어찌하랴（子を孕んでいる私をどうかするもんか）」がそれを示していると言える．

女性の子の出産に対する認識に関しては，韓国の諺の方により具体的事柄が提示されており，内容面においても子が産めない女性に対する叱咤が激しく描写されている．その上，男児の出産への熱い願望を「胎夢」という媒介体を通して反映したものも見られる．韓国では妊娠の初期もしくは末期の頃に見る夢を「胎夢」といい，胎夢の中に現れる特徴的な象徴物をもってこれから生れてくる赤ん坊の性別を占う風習がある．諺に現れているのは「龍」で，胎夢で「龍」を見ると男の子が生れると言い伝えられている．これらの表現は絶対的な血統主義を原則とする韓国社会の家継承の特徴をそのまま反映したものであり，かつ韓国社会の女性にとって男児の出産というのがいかに重要な役割であったかを段的に見せているものとも言える．

3．1．2 女性が備えるべき性質及び行動

（1）貞節を守ること

両国の諺の中には女性の品行は崩れやすいものという認識を表しているものとともに，女性に貞節を守ることを強く押し付けているようなものが多く，中には貞操を失った女性を嘲る形の表現も相当見られる．

日）貞女を立てたし間男したい
貞女は二夫を更めず
町内で知らぬは亭主ばかりなり
河豚と間男は食い初むと堪忍ならぬもの
煎り豆と間男は食いかけたらやめられぬ
雪の明日は間男の穿鑿
韓）까마귀 학이 되랴（烏が鶴になるもんか）
놀던 계집이 결단이 나도 엉덩이짓은 남는다
（尻の軽い女がだめになってもお尻の振りようは残る）
부앗김에 서방질 한다
（怒ったあげくに間男）
열녀전 끼고 서방질하기
（烈女伝を挟んで間男）
유리와 처녀는 깨어지기 쉽다
（ガラスと処女は割れやすい）

女性の貞節に関しては，韓国の方がより厳格に制裁していたことが窺える．貞節を失った女性に対する叱咤がより激しく現れていることや一回きりの不貞でも絶対に許されないという認識を含む「하룻밤을 자도 헌 각시（一晩を寝ても古い嫁）」「한번 가도 화냥 두번 가도 화냥（一回行っても還郷[5]，二回行っても還郷）」のような表現が見られることがそれを裏付けていると言える．「한번 실수는 병가의 상사（一回の過ちは兵家の常事）」のような表現を通して，過ちを犯した人に対しては寛容を施すような余裕はあっても，女性の不貞に対しては冷酷な態度を取っていることが分かる．なお，韓国の諺の中に「젊은 과부 한숨은 땅도 꺼진다（若い後家のため息は地も引っ込ませる）」「과부는 밤에 통곡하지 않는다（後家は夜中に泣かない）」「젊은과부 울음소리는 산천초목을 울린다（若い後家の泣き声は山川草木を泣かせる）」のような，後家の辛い心境や哀れな姿が描かれている表現がとりわけ多く見られることからも貞節を守ることがいかに強く求められていたかを窺い知ることができる．

後家の再婚が比較的に自由であった日本とは違

って，韓国の場合は，後家の再婚を法的に制裁（成宗16年（1485））していた．処罰の内容というのも再婚した女性本人に限って適用されるものではなく，子孫たちの官職登用に不利益を与える形として展開されていたのである．朝鮮時代には官職とともに権威が最も重んぜられていた状況であったため，子孫たちの官職進出の制限とは，再婚女はもちろん，その家族たちにおいても致命的な刑罰であった（李　1995）．このような貞節イデオロギーは17世紀以降，より一層強化され，やがて庶民社会にまで生活道徳として内面化され，貞節とは女性にとって命よりも大切なものとなった（李　1996）．

3．2　共通の認識に見られる微妙な相違点

（1）仏教の女性観

日本の諺の中には女性を生まれながらにして罪深いもの，不浄なものと見なす仏教の女性観が示されており，諺の中では「女は魔物」「おなごは悪性物」「女は地獄の使い」のような形をもって現れている．

仏教の女性観に関して岩本（1980）は，「ヒンドゥー教の中心的文献「マハーバラタ」は，女性は本質的に悪，汚れており，自己規制ができず，性に快楽を求め飽きることがない．また，内心は過酷で嘘の権化であることからいかなるときも祭祀にとって不浄であり，決して存在してはならない」と述べている．いずれにしても，女性を劣等なものと見なしている点では儒教の女性観とほとんど変わらないと言える．

このように，日本の諺の中に仏教の女性観が特徴的に現れているのは，儒教が唯一の統治理念と位置付けられていた韓国の場合とは違って，儒教・仏教・神道の三つの思想が統治理念として融合して発展していた日本の理念的背景の特徴に起因するものと捉えられる．

（2）女性の嫉妬に対する認識

日本の諺には「焼き餅と欠き餅は焼くほうがよい」「焼き餅は狐色」「悋気は女の七つ道具」「悋気嫉妬も正直の心より起こる」のように，女性の適度な嫉妬はむしろ愛らしくて好ましいものという認識とともに，嫉妬をうまく利用すれば，男性を操縦できる絶好の手段にもなるという認識，つまり嫉妬に対する肯定的認識を示している表現がかなり見られる．

このような認識は日本の諺にしか見られない独特なもので，儒教倫理の受容とともに発達しつつ

表4　相違な認識の諸様相（（　）内は各項目別用例数）

	日本の諺（女性の諺総数（114））		韓国の諺（女性の諺総数（103））	
	認識の内容の項目	用例数	認識の内容の項目	用例数
属性	女性の存在を好評（7） 年上の妻への肯定的認識（5） ＜1つ上の妻（3）含む＞ 縁起の良いもの（1）	13	暴力の対象	4
	内心の分からないもの	3	口実を言うもの	2
	執念深いもの	2		
	欲を出すもの	1		
	愚痴をいうもの	1		
	心が狭いもの	1		
小計	6項目	21	2項目	6
性質及び行動	優しさを勧告	2	気前の良い女への嘲弄	6
	愛嬌であることを勧告	1	身持ちの良くない女への嘲弄	3
			わきまえのない女への嘲弄	3
			怠け女への嘲弄	2
			しゃあしゃあ女への嘲弄	1
			ちゃかちゃかする女への嘲弄	1
小計	2項目	3	6項目	16
総計	8項目	24	8項目	22

あった平安文学にも，女性のさまざまな精神美をよく描写しているものがあり，物思いに悩む女，嫉妬で少しすねている女性，男性の腕の中で，安らかに寝息している女性などの美が表現されている（宮城・大井　1983）．

（3）女性の出産に対する認識

日本の諺の中には「産は女の命定め」のような，女性の出産を命にかかわる大変危険なものと捉えている表現が比較的に多く，女性の子の出産に対する役割に関しては，高く評価する認識が示されている．このような認識の現れは，平安末から鎌倉初期に成立したと考えられる母性尊重思想に基づくものと考えられる．

日本では女性の存在価値を「家」の後継者を生み育てることに限定する母性尊重思想が成立していたのである．日本の家制度の中で，とりわけ，「母性」が正統視，重要視されてきた伝統は今日まで，どこからも異論を差し挟まれることなく文化価値的な存在とさえなっていると言われている（吉川 1980）．

3．3　両国の女性に対する相違な認識の様相

女性に対する相違なる認識においては，韓国の諺には女性が備えるべき性質及び行動（振る舞い）に対する認識が多く見られているのに対し，日本の諺には女性の属性に対する認識が多く見られる．

3．3．1　女性の属性に対する特徴的認識

（1）日本の諺

a．女は国の平らげ
　女ならでは夜が明けぬ
b．家に女房なきは火のなき炉の如し
　鍋蓋と女房は無うて叶わぬ
　女房と米の飯には厭かぬ
　女房いなした跡は銭百貫落としたほど力がないもの
　身上は妻から
c．姉女房は身代の薬
d．女房と鍋釜は古いほど良い
　饂飩蕎麦より嚊の傍
e．男を尻に敷金女房
　悋気は女房の敷銀
　女房去ったは銭百落とした心持ちする

日本の諺に見られる最も大きな特徴と言えるものは女性に対する肯定的認識を示したものが多く見られることである．

まず，aのような女性の存在価値に対する肯定的認識，つまり，女性がいないと何事もうまく進まないという認識とともに，女性は雰囲気を和らげる存在という認識を示しているものが見られる．

次に，上記のb～dまでの表現は，いずれも妻に対する好評を言っているものである．女性に対する好評を語っている表現の中で，最も強調されているのはほかならぬ妻に対する肯定的認識である．一家の家政の繁盛は妻の手腕によって左右するため，絶対になくてはならない存在と見なされており，そういう意味で家政をよりうまく治めることのできる年上の妻が好まれていたことを示唆するものも現れている．これらの表現は庶民社会の家庭生活においての妻の位置をよく反映しているものと捉えられる．つまり，妻が夫とともに生産労働でも大きく力量を発揮していた農民や商人，職人の家庭では主婦の実質的な立場がかなり違っていて，主婦は一家の消費についての家計の一切に責任を持ち，衣食住に関する限りでは家族成員はもちろん，夫に対しても発言力をもっていた（宮城・大井　1974）．

なお，妻を金銭と関連づける認識が窺えるeのような表現も見られるが，これはおそらく日本の伝統社会における婚姻風俗に起因するものと捉えることができる．つまり，近世の庶民社会の女性は嫁入り道具の他にも「敷金」と称する結婚持参金を持っていくことが一般的であった．政略的意味合いが強かった武家の場合とは違って，財産分与の一形態であったが，特に娘には嫁入り道具と持参金の形で分けるというのが大よその基準となっていた（小泉　1989）．従って，女性が持参金を持ってくるというのは，ある意味では一家の家政に大きく寄与することともなり，かつ女性が家庭内で自己を主張することのできる大きな要件として働いていたことも十分考えられる．

前述の3．1．1で述べたように，女性の属性に対する認識の中には確かに「女の鼻先思案」「女

は猿知恵」のような，女性の浅い知恵を強調して女性に対する蔑視意識を表しているものもある．しかし，上記のような女性に対する好評の表現が多く含まれていることや女性の知恵に対しては嘲っていながらも一方では「雌鶏勧めて雄鶏時を作る」「妻の言うに向こう山も動く」のような，女性の意見が持つ影響力の強さを示した表現も含まれていることから，日本の女性の家庭内における位相とはそれほど低いものではなかったことが考えられる．「嬶天下」は，このような社会的背景をよく反映したものとも言えよう．

（2）韓国の諺

여자는 사흘을 안 때리면 여우가 된다
（女は三日毎に殴らないと狐になる）
계집 때린 날 장모 온다
（女房殴った日に女房の母親が訪ねてくる）
영에서 뺨 맞고 집에 와서 계집 친다
（営で頬を打たれ，家に帰って女房を打つ）
아재미 때리는 몽둥이는 있어도 시앗 때리는 몽둥이는 없다
（兄嫁を殴る棒はあっても義理の弟を殴る棒はない）

韓国の諺には女性に対する暴力を示唆する表現がとりわけ多く見られ，一つの大きな特徴を成している．諺に示されている暴力とは女性のずる賢い性質に対するしつけの手段としての暴力であり，かつ男性の悔しさを解消するための暴力という形態を帯びているが，その暴力の相手としての役割を果しているのが女性である．上記の表現はいずれも，家庭内における暴力，つまり夫の妻への暴力が中心となっているが，「때리는　시어미보다 말리는 시누가 더 밉다（殴る姑よりも止める小姑がより憎い）」のような，嫁に対する姑の暴力を示唆する表現も含まれている．いずれも韓国の伝統社会における女性の地位というのがいかなるものであったかがよく窺えるものとして捉えられる．

韓国の諺にこのような男尊女卑意識に基づく表現が全般を成しているのは，韓国の伝統社会が儒教を支配理念とした徹底的家父長制社会であったことと深く関わっていると言える．つまり，絶対的父系血統主義が家長権の強化をもたらしたのであり，上記のような表現はそれをよく反映しているものと捉えることができる．

李（1994）は，家父長権を牽制するような制度的装置が非常に弱かったため，韓国の家父長権は絶対的権限を持ち，かつ家父長権そのものは中国よりも独裁的性向が強かったと韓国の家長権の特徴を述べている．

3．3．2　女性が備えるべき性質及び行動

女性が備えるべき性質及び行動（振る舞い）においては，日本の諺には女性に対して優しさや愛嬌のような性質を求めているものが多く，韓国の諺には女性の性質よりも備えるべき行動（振る舞い）を提示しているものがより多く含まれている．つまり，男性に求めていたものと同様に，身の程を知ることや勤勉で，几帳面であることを求めており，かつ図々しく振舞うことは望ましくないという認識も表している．

その他，最も多く現れているものとしては，次のようなものがある．

a．여편네 활수하면 벌어 들여도 시루에 물 붓기
（女房が気前を良くすると稼いでも蒸篭に水注ぎ）
아래 큰 년의 살림이라
（下の口の大きい女の家政）
함지밥 보고 마누라 내쫓는다
（くり鉢の中の飯を見て，女房を追い出す）
b．남의 사정 보다가 갈보난다
（人の都合に合わせたあげくに淫売婦になる）

上記のａとｂの表現は，家事の面においても，身持ちの面においても，気前が良ければいけないという認識が示されているもので，女性に対して勤倹であることや貞淑であることを求めているものとして捉えられる．特に，ａの表現はいずれも気前の良い女性に対する否定的認識を示しているものであるが，表現の内面には家事に一々口を挟んでいる男性の姿が潜んでいる．女性が家事のや

りくりを疎かにしたり，気前を良くしたりすると男性に追い出されるという場面も窺えることから，韓国社会における一家の家政は究極的には男性の統制下で成り立つものであったことが考えられる．

4．おわりに

両国の諺に見られる男女観の特徴は，以下のように大きな点で二つに集約できる．

第一に，両国とも男女差別的性向が顕著に働いていたことが指摘できる．

男性に対する認識の様相の多くは，男性中心社会に見られる大きな特徴である男性優越意識に基づいたもの，つまり男性は強いもので，あくまでも主導的存在だという認識に基づいたものを理想的男性観と定めているものが主を成しており，かつ男性の否定的側面を引き出しているものはそれほど多く見られない．なお，男性の行動に対しては何もかも合理化しようとする傾向が強く見られる．これに対し，女性に対する認識の様相の多くは，女性の劣等を強調したものが全般を成しており，特に表現の中には女性を男性の支配権の下に閉じ込めようとする男性の願望が込められているものも多いが，これは諺そのものが男性によって創られたものであることにも大きく関係していると思われる．

第二に，男女間における地位の格差様相は韓国の方により激しく現れた．

日本の諺には女性の存在価値に対する高い評価をはじめ，女性は縁起の良いもの，妻の大切さ及び生活力の強さ，女性の嫉妬に対する肯定的認識等を示している表現が相当数現れ，これらの表現を通して女性は家庭内における地位をある程度確保していたことを窺い知ることができる．これに対し，韓国の諺には男尊女卑の性差別意識に基づいた表現が全般を成しており，終始一貫女性の劣等を強調している．中には特に，女性に対するしつけの一環としての暴力を示唆する表現も見られ，男性に従属された韓国社会の女性の下等な地位様相を窺い知ることができた．このような，女性の地位様相の違いは，それぞれ違う方向に発展しつつあった両国社会における家父長制の影響力をよく反映したものと捉えることもできるであろう．

注記

（1）日本の『故事ことわざの辞典』は，1982年に刊行された『故事俗信ことわざ大辞典』をベースとして生まれたもので，本稿の研究範囲とされない慣用句，俗信・俗説，ことば遊び・しゃれ・和歌・俳句・川柳などの項目を省き，主に諺を中心に収録している．さらに，事項別ことわざ索引が設けられ，諺の言わんとする内容や，手がかりとなる言葉，キーワードを分類し，それぞれに類似の項目，あるいは，関連の深い項目をたやすく調べることができるようになっている．韓国の『俗談辞典』は，既存の諺辞典の中では最も代表的位置を占めているものであり，かつ研究の資料として最も信頼されている．

（2）既婚の男性が髪にかぶる頭巾のようなもので，網の形をしている．

（3）口がうるさく小言の多い男性を小粒の栗にたとえていう表現である．

（4）死者の霊魂を慰める巫俗の儀式の一種である「チノギセナン」の略語であり，一名「チノギクッ」とも呼ばれる．これに関して，崔吉城（1996）は，「チノギクッ（死霊祭）」という，死の不浄を清め，霊魂をあの世に送る意味の巫儀がある．この死霊祭は不浄の清めを促進する意味もあって，喪の期間内に行われることもあると述べている．

（5）丁卯胡乱（1628）と丙子胡乱（1637）の際，清の捕虜として強制的につれて行かれた後，清との講和条約が結ばれることによって送還されてきた女性を指して「還郷女」と呼んだ．今日の品行の悪い女性を指す言葉の「화냥년（ファニャンニョン）」は，この「還郷女」に由来するものである（キム1999）．

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Abstract

Contrastive Study of Proverbs in Japanese and Korean Languages – Concerning the view on Men and Women –

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The purpose of this paper is to investigate and to clarify the characteristics of the view on men and women by comparing Japanese and Korean proverbs and so we can get information to understand their cultural and traditional backgrounds. It is very important to find the root of the modern view by studying the past.

The view on men and women in the proverbs of both countries is thoroughly based on the sexual discrimination, that is, men are superior to women. Especially, the negative view on attribute of women is often included in this discrimination.

Furthermore, there is big difference between the Japanese and Korean proverbs from the view point of social position of men and women. Man and woman are as opposite as two poles in the Korean proverbs, while, the affirmative view on attribute of women frequently appears in the Japanese proverbs. Hence, Japanese women might secure the higher position than Korean women in their houses.

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インドネシアの日本語教育における教材に関する日本の協力

―後期中等教育を事例として―

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はじめに

海外における日本語学習者は近年益々増加しており，学習者数の95%以上を占めている．海外特に途上国における日本語教育においては依然として多くの問題点が存在するのが現状である．国際交流基金の1998年の日本語教育機関調査 (1) によると，海外における日本語教育機関全体の日本語教育上の問題点は1993年，1998年共に「教材の不足」が１位となっている．

「教材の不足」の問題は，教材 (2) そのものが物理的に足りないというハードの問題ではなく，「教員の資質」の問題であると考えられる．つまり，教材を供与するなどの物質的支援のみによって解決されるものではなく，最終的に教師が教材を作成，アレンジできる能力を身に付けることが不可欠である．なぜなら，教材とは教授法や現場の条件等に基づいて作成されるものであり，その理解なしにいきなり使用できるものではない．現在日本から海外へ寄贈されている教材の多くは，日本で発行され日本での学習者を対象に作られたものであるため，海外の事情には合わないものが多い．従って，現場の教師に既存の教材をアレンジしたり自ら教材作成する能力が求められる．しかし途上国の多くの教師はそのレベルに達していないのが現状である．

インドネシアの中等教育機関において日本政府による協力事業が始められたのは1995年からと最近であり，1996年の普通高校カリキュラム改定とほぼ時期を同じくして開始された．日本語教育の現状については徐々に明らかにされている．また教材開発や教員研修など，国家教育省との連携で独自の支援体制が確立されつつある．しかし，現職の日本語教師に対しての現状調査及び統計学的分析による学術研究はまだ皆無といってもよい．今後の日本の協力のさらなる改善のためには，これまでに行われた事業について学術的に検証することは意義があると考える．

そこで本研究では以下の２点を目的とし，「教材の不足」の問題の解決の一助となることを望むものである．

（１）現職日本語教師の教材の所有，使用，作成に関する調査により「教材の不足」の現状と背景を探る．
（２）教師がより教材を作成するようになるにはどのような日本の協力が必要かを探る．

調査の方法は，インドネシア普通高校日本語教師を対象とするアンケート調査及び２度の訪問調査による．調査の詳細は後に述べることとする．

１．日本語教育における教材に関する現状と日本の協力

１－１．日本国内の日本語教育教材と海外の日本語教育教材

岡崎（1989）によると，1980年代以前の日本語教育において，教材とは主に教科書及び文法のハンドアウト，そして宿題及び録音テープであり，日本の文学・芸能の文献学習のための文法・読解能力の養成を必要とする大学院生を中心としたほ

ぼ単一の学習者像を設定できた．これに対して80年代以降は日本語学習の目的，出身地域，文化，母語，年齢，現在及び将来の専門など，どの要素を取り上げても多様化が進行しているため，過去の単一のセットの教材による日本語の指導はもはや不可能になっている．また，国内学習者のための教科書，教材は開発が進んでいるが，海外の教科書，教材はそれとは異なり，これについては未開拓であると述べている．

ウィウィ・イスハック（1980）は，日本で外国人に教える教科書はインドネシアで使うには特に初級の段階では適切な教材とは言えないと述べている．理由として，「たとえば『地下鉄』や『山の手』などというような言葉が出てきたとき，現に私たちの学校でも教師たちは説明に困っている」という例が挙げられている．

また池田（1980）は，入門期における「母語教材」の必要性を主張しており，特に外国の場合は教科書と教師の善し悪しが大変重い意味を持つと述べている．母語別教材とは，「日本の文化から発想された日本語を，さまざまな言語圏の言葉と比較対照して，何が同じで何が違うのか，といったことが深く検討された結果作成されたもの」であると述べられている．

このように，海外の日本語教育の現場において，日本で日本語を学習するために作られた教材を用いることの問題点が挙げられており，海外では海外の学習者の事情にあった教材が必要であると述べられている．しかしながら，具体的に海外の日本語教材と日本の日本語教材はどう違うのか，どのような教材が海外で必要とされているか，などに関する詳細についての研究はまだほとんどされていない．もっとも海外と言っても様々な国が存在し，それぞれ事情は異なるため，ひとまとめに論じることはできないのは言うまでもない．

『日本語教育事典』によると，「各日本語教育機関はその対象とする学習者側の条件と，教授者側の条件などによって教科書を編集している．すなわち，何をどのくらい教えるかについては，学習者の目的，目標，期間，が条件となり，どのような計画で，どのような形をとるかという教科書の形態については，教授者側のもつ教授法等が条件となる.」よって教材とは，「日本語教育諸機関で，その機関において，優れたものであればあるほど，他の異なった目的・目標等の学習者にとっては，使いづらいものになってくる」(3) 性質のものである．

例えば，日本で編集されている教科書の多くは日本語で書かれている．これは，日本で日本語を学習しているため，また日本では多くの場合１クラスの学習者全員の母語が同じでないことなどが理由であろう．しかし，海外の場合には，学習者の母語が共通であれば母語を使った方が効果的であるとも考えられる．また，日常生活で日本語が必要であるとも限らない．そのような場合には，全て日本語であるよりも，母語による説明等が入った教科書の方がより事情に即したものになるであろう．

また，日本で編集される教科書は，日本での学習者のためのものが圧倒的に多く，「日本で日本語を使う」ことが前提となっているものが多い．例えば『文化初級日本語Ⅰ』(4) を例にあげると，「生活会話」（p.6）では三鷹駅や銭湯，電車の中，食堂，大学などが場面として使われ，「おはようございます」，「こんにちは」などのあいさつ表現が紹介されている．

このように，海外では学習者の目的，目標，期間，母語，学習する場所など，多くの点で国内の学習者とは異なっているため，国内で編集される教科書をそのままでは使いにくい場合が多いことは容易に想像できる．では，この問題はどのようにしたら解決できるのであろうか．

１－２．教材に関する日本の協力

教材に関する直接的な，つまり教材そのものの作成，寄贈や教材作成に対する助成という意味の日本の協力としては，国際交流基金の公募プログラムである「日本語教材寄贈プログラム」，「日本語教材制作助成プログラム」，「日本語教育フェローシップ」が主なものとして挙げられ，プログラムの成果教材として多くの教材が出版されている(5)．

また同基金により『日本語初歩』シリーズ，『写真パネルバンク』シリーズ，『ヤンさんと日本の人々』などをはじめ，多くの教材・教具が制作されている (6)．最近では，1999年に『教科書をつくろう・れんしゅう編』及び『教科書をつくろ

う・せつめい編』が発行されている[7]．同教材は海外の日本語学習者，特に多数を占める中等教育段階の学習者向け教材を作成するための素材集として開発されている．つまり，海外の多様な学習者に対して，日本で個別の事情に対応する教材を作成するのではなく，同教材を参考に個々の現場で「教師が教材を作る」ことが前提とされている．国による日本語教育事情の違いが考慮されているという点で画期的である．

このように，教材に関する直接的な支援のための幾つかのプログラムが行われている．しかしながら，依然として「教材の不足」が一番の問題点として挙げられるのはなぜであろうか．

筆者の考えでは，「教材の不足」は，それらの教材に関する直接的な支援のみによって解決される問題ではないと考える．なぜなら，最終的にはそれぞれの国が教材作成に関して，日本の支援に頼らず自立できることが必要だと考えるからである．つまり，現場の日本語教師が自ら教材を作成できたり，あるいは既存の教材をアレンジする能力を身につけなければ，いつまでも既存の教材や日本からの寄贈に依存し続けることになり，問題の解決に結びつかない．よって「教材の不足」とは，教材そのものの絶対数が不足しているというよりも，それぞれの教育現場に合った教材が不足しているということであり，また既存の教材に頼らざるを得ない教師の資質の問題であると考えられる．

例えば，前述の国際交流基金による「教材寄贈プログラム」では，寄贈される教材は「日本国内の一般市場で正規に出版・流通しているもの」に限られている．既に述べたように，海外の日本語教育に使用する教材は，日本国内で使用するものとは内容が合わない可能性が高い．とすれば，寄贈された教材を，教師が個々の現場の事情に合わせてアレンジして使用しなければならないことが多いと考えられる．寄贈された教材が，すぐにそのまま現場で使えることは少ないということは，前に述べた教材の持つ性格による限界である．

「教材の不足」を解決するためには，筆者の考えでは「教材作成の出来る教師の育成」が必要である．そのための手段として日本語教師に対する「研修[8]」が教師の「教材作成」能力の向上に必要であると考える．つまり教師が「研修」を受けることにより，自分で教材を作成したり，既存の教材をアレンジする能力が身につくと考えられる．その能力があって初めて寄贈教材を活かせるようになるのではないか．さらには，それが結果的に「教材の不足」の解消につながるのではないか，ということである．「自助努力」は，ODA大綱の４つの柱[9]のひとつでもあり，日本の政府開発援助の指針ともなっている．日本語教育の分野でも，同じことが言えるのではないか．

２．インドネシアの学校教育における日本語教育の概要

２－１．インドネシアの教育システム

学制は６・３・３制である．従来義務教育は７～13歳の６年間であったが，1994年から前期中等教育段階の３年間を加え16歳までの９年間となった．初等教育から高等教育に至るまで，教育を所轄する国の行政機構は国家教育省と宗教省の２つの系統に分けられる．宗教省所管の学校としては，イスラム学校（Madrasah）があげられる．

外国語教育については，英語が第１外国語として中学校から採用されている．第２外国語は基本的に高校から選択科目として履修される．第２外国語としては，普通高校の場合日本語の他にドイツ語，フランス語，アラビア語がある．

現在日本語教育が行われているのは，学校教育では普通高校，専門高校，宗教高校などの中等教育機関，大学，専門学校などの高等教育機関である．

２－２．日本語教育の歴史

同国では第２次大戦前から日本語教育が行われていた．その後日本軍政下での日本語教育を経て，戦後再び機関における日本語教育が開始された．戦後の学校教育において外国語として日本語教育が取り入れられたのは1960年代である．

1963年に国際交流基金による日本語教育専門家の大学への派遣が開始された．また本稿で取り上げる中等教育機関への同基金による支援が始まったのは1995年であり，まだ最近のことである．

２－３．日本語教育の現状と諸問題

２－３－１．初等・中等教育レベルの現状と諸問題

インドネシア国内の学習者の割合は，初等・中等教育の学習者が65%と多数を占めている．初等教育機関においては現在公式に日本語教育は行われていないため，中等教育機関でのみ日本語教育が行われているということになる．

中等教育においては1960年代に日本語がカリキュラムの中で第２外国語として正式に認められ，1975年，1984年，1994年のカリキュラム改訂を経て現在に至っている．現在は，主に国立及び私立の普通高校（SMU）及び専門高校（SMK）で日本語教育が行われている．

普通高校においては，84年カリキュラムに代わって，94年新カリキュラムが96/97年度[10]から施行された．64年，75年，84年カリキュラムは教育目的，教材，教授法の面で実際には大きな違いはなかったが，94年カリキュラムは従来のものとかなり異なっている．

カリキュラム改訂に伴い，教授法が変わったこと，教科書がないことなどの理由から，教え方に不安を感じる教員の声が高まった．これに対して，教育文化省（現在の国家教育省）語学教員研修所（PPPG Bahasa）と国際交流基金の協力により，96年６月に開催されたインストラクター候補研修[11]の成果である教室活動アイデア集をたたき台に，２度の改訂を重ね，98年10月に『インドネシア普通高校日本語学習書』[12]が完成した．

中等教育機関への国際交流基金の支援は普通高校への支援から始められたが，その後専門高校の観光科等への支援へと拡大されている．

国際交流基金の調査によると，中等教育機関における日本語教育上の問題点として上位に挙げられているのは，①設備不十分，②教材不足，③日本語能力不十分，となっている．またワワン，池津 （1999）によると，同国中等教育レベルにおける問題点として①教員の日本語力，②教材の不足，③エキストラ・カリキュラム（課外授業）のシラバスがない，④教育大学の教員養成と就職状況，⑤職業高校（SMK）の教員の養成，が挙げられている．

２－３－２．高等教育レベルの現状と諸問題

高等教育機関における日本語学習者数は11,110人となっており，学習者全体の約21%を占める．国際交流基金の98年の調査によると，現在全国で少なくとも観光専門学校を除く高等教育機関43校で日本語教育が行われている．93年の調査と比べると14機関増加している．うち21校に日本語専攻の過程が設けられている．過程は２種類で，４年制の学士課程（S1）と３年制のディプロマ課程（D3）である．そのうち12校が学士号を授与している．

インドネシア大学では，89年９月に日本研究の修士課程が開講し，94年には博士課程も開講したが，現在のところまだ博士課程の修了者はない．また，文学部や理工学部でも選択科目として日本語が教えられている．

国際交流基金の調査[13]によると，高等教育機関における日本語教育上の問題点として上位に挙げられているのは，先に挙げた中等教育機関と同じく①設備不十分，②教材不足，③日本語能力不十分，となっている．しかし中等教育機関では「設備の不足」と「教材の不足」の割合が極端に多いのに対し，高等教育機関では「日本語能力不十分」「教師数不足」など教員に関する問題の割合が高くなっている．

また，ワワン，池津（1999）によると，高等教育機関における問題点は①教員数の不足，②高学位取得者の不足，③教員の教授力の問題，となっており，十分な能力を備えた教員の不足が問題点として挙げられている．

中等教育と高等教育を比較してみると，「設備の不足」や「教材の不足」は共通する問題点として挙げられるが，中等教育機関の方がその傾向が強いと言える．また，高等教育機関では教員数の不足が大きな問題となっているのに対し，中等教育機関では教員の数に関してはあまり重要な問題とされていない．逆に，カリキュラム改定に伴う学習者の減少，語学系クラスの閉鎖等によって，日本語教師が日本語でなく他の科目を教えることを余儀なくされるなどの問題も起こっている．しかしながら，教員の能力や資質については，中等教育機関，高等教育機関のいずれにも共通する問題となっている．

３．インドネシア普通高校日本語教師の教材作成に関するアンケート調査

３－１．アンケート調査の目的と方法

同国後期中等教育においては，1994年カリキュラム施行後にカリキュラム普及のためのいくつかの研修が既に行われている．また国際交流基金派遣の青年日本語教師による高校日本語教師への指導が行われている．

そこで，以下の２点を目的にアンケート調査を試みた．

（１）インドネシアの中等教育機関のうち普通高校日本語教師に関する日本語教育教材の所有，使用，作成の現状を明らかにすること．
（２）教師の教材作成に何が影響しているかを検証すること．検証のための要素として「A.日本語教育に関する研修」，「B.教材作成のための費用」，「C.教材作成のための時間」，「D.教師の日本語力」の４つの要素に関して，それぞれが教師の「教材作成」に影響しているかどうかを統計的に検証する．

調査の対象者は，国立及び私立の普通高校（SMU）に勤務する日本語教師全員で，『海外の日本語教育の現状・日本語教育機関調査1998年』及び，国際交流基金ジャカルタ日本文化センターによる2000年７月現在の最新データに基づく293名である．実施期間は，2000年８月～10月で，郵送によりアンケート調査を送付した．回収率は70.3%である．回答者のうち３名は普通高校以外の教師であることが判明したため集計の際は除いた．よって集計の際のサンプル数は203名である．調査項目は全部で30項目である．そのうち，内容別に大きく分類して①回答者のバックグラウンド，②日本語教材の現状に関する質問，③研修をはじめとするAからDの各要素に関する質問，とした．調査票はA3用紙両面からなり，全てインドネシア語で書かれたものを使用した．データ入力及び統計処理には「SPSS Version10.0」及び「Microsoft Excel 2000」を用いた．分析方法は，単純集計，クロス検定，カイ二乗検定，T検定等を用いた．

３－２．教材の所有・使用に関する現状

インドネシアの普通高校教師によって使用されていると思われる日本語教材のうち，①『普通高校日本語学習書』，②日本語の辞書，③日本で発行された教科書・参考書，④インドネシアで発行された教科書・参考書，の４種類について所有の有無を尋ねたところ，図１.のように『日本語学習書』，日本語の辞書，インドネシア発行の教科書・参考書については，90%以上の教師が何らかのものを持っているという結果となった．日本発行の教科書・参考書については４種類の中では１番割合が低くなっているが，それでも65.3%の教師が何らかのものを持っている．

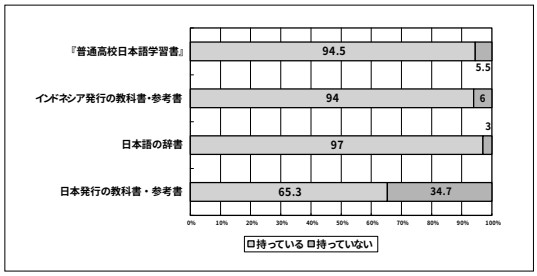

図１．教材別の所有の有無

これらのデータから，教材は「全くない」わけではないということが言える．
次に教材の使用については（図２.），最も「よく使われている」割合が高いのは，『日本語学習書』の68.2%となっている．「全く使っていない」は4.5%となっており，95.5%は何らかの形で使っていることになる．一方「まったく使っていない」の割合が最も高いのは「日本発行の教科書・参考書」の26.5%となっている．しかしながら，残りの73.5%は何らかの形で使用していると答えている．

３－３．ワープロの所有と使用について

「使用可能なワープロ，またはパソコンを持っているか」という質問に対し，「持っている」教師は全体の19%となっており，81%は所有していないことから（表１），ワープロを所有している教師の割合は低いと言える．

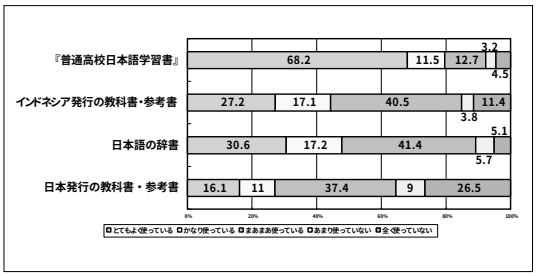

図２．教材の使用について

表１．使用可能なワープロ及びパソコンの所有の有無

	教師数（割合%）
持っている	39（19.3）
持っていない	163（80.7）
合計	202（100.0）

次に，使用可能なワープロまたはパソコンを「所有している」と答えた教師に対して「ワープロまたはパソコンを使って教材を作成しているか」という質問をしたところ（表2.),「全く使っていない」と答えたのは12.8%で，残りの87.2%は何らかの形で使用していると答えている．またその中で「あまり使っていない」と答えているのは15.4%で，「いつも使用している」,「よく使用している」，と答えた教師の割合35.6%，また46.2%は「まあまあ」と答えている．これらのことから，ワープロ及びパソコンを所有している教師が，それを使って教材作成を行っている割合は高い．

表２．ワープロ及びパソコンによる教材作成の有無

	教師数（割合%）
いつも	5（12.8）
よく	5（12.8）
まあまあ	18（46.2）
あまり	6（15.4）
全然	5（12.8）
合計	39（100）

３－４．教材使用の理由について

次に，前に述べたような教材を使っている理由について尋ねたところ（図３.),「使い慣れている」こと,「カリキュラムに合っている」ことが重要であるという回答の割合が多い．一方,「人に薦められた」,「値段が安い」ということが重要であるという回答の割合は少ない.「インドネシア語で書かれている」については，重要であると答えているグループと，重要でないと答えているグループに分かれているという傾向が見られる．

この結果から，教師が教材を使用する理由は，人に薦められたとか，値段が安いということよりも，カリキュラムに合っているという内容を重視していると言える．

一方，内容よりも使い慣れているということを重視する傾向も見られることから，実際には内容は合っているとはいえないが，使い慣れているために使用しているということも考えられる．

前に述べた「教材の使用」についての結果で『日本語学習書』が最も使用されている割合が多く,「日本発行の教科書・参考書」が最も少なかったことを考えると，やはり「使い慣れている」,「カリキュラムに合っている」という理由でそれらの教材を使用していると考えられる．

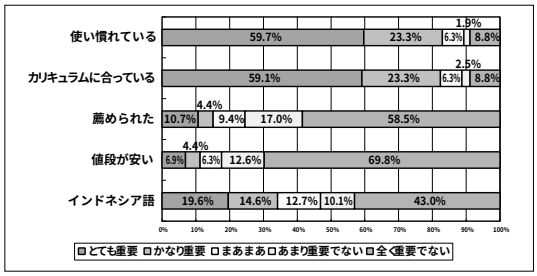

図３．教材使用の理由

３－５．94年カリキュラム施行前と施行後の教材作成の差

３－５－１．教材の使用について

94年カリキュラムが施行される前と後では，教師の教材作成に差があるのであろうか．そこで,「教材の使用」と「自分で作成しているか」について質問した．

まず，教材の種類を①宿題のプリント，②アクティビティー用のプリント，③小テスト，④絵カード，⑤文字カード，⑥単語帳・辞書，の６種類に

分類した.

次に，上の６種類の教材の使用頻度について，94年カリキュラム施行前と施行後について尋ねた．カリキュラム施行前と施行後の教材の使用についてクロス検定及びT検定を行ったところ（表3.)，施行前と施行後では教材の使用に差が見られるという結果となった.

表３．カリキュラム施行前と施行後の教材使用の差

教材の種類	ガンマ値	近似T値	p値
宿題	.582	6.120	**
授業使用のためのプリント	.223	2.007	*
小テスト	.545	5.797	**
絵カード	.489	5.656	**
文字カード	.452	4.584	**
単語帳・辞書	.545	5.502	**

*= p ＜.05 **= p ＜.001

３－５－２．教材の作成について

次に，同じ教材について，それらが「自分で作成，あるいはアレンジしたものであるかどうか」を尋ねた．カリキュラム施行前と施行後の教材作成についてクロス検定及びT検定を行ったところ，表4.のように教材の使用についての結果と同じく，施行前と施行後の教材作成に差が見られるという結果となった.

表４．カリキュラム施行前と施行後の教材作成の差

教材の種類	ガンマ値	近似T値	p値
①宿題	.677	8.010	**
②授業使用のためのプリント	.403	3.960	**
③小テスト	.631	7.603	**
④絵カード	.508	5.820	**
⑤文字カード	.459	4.943	**
⑥単語帳・辞書	.581	6.055	**

**= p ＜.001

このように，いずれの種類の教材に関しても，カリキュラム施行前と施行後では明らかに差が見られる．特に「アクティビティー用のプリント」,「絵カード」,「文字カード」については，カリキュラムの改定そのものにより直ちに変化したとは考えにくく，カリキュラム施行後に行われた教師に対する研修の影響によるものであると考えられるのではないか.

３－６．日本語教育に関する「研修」の「教材作成」に対する影響

３－６－１．研修の概要

本調査では，同国普通高校日本語教師を対象に行われている日本語教育に関する研修を以下の５つのタイプに分けた.

〈研修タイプ１〉地域の日本語教師会（MGMP）主催の勉強会

各地域において，日本語教師会（MGMP）の主催により行われる勉強会．地域によって開催頻度や内容は異なる．派遣地域に青年日本語教師が派遣されている場合は指導のため参加している.

〈研修タイプ２〉インストラクター研修

国家教育省語学教員研修所（PPPG Bahasa）及び国際交流基金の共催で行われる．94年カリキュラム施行以降は，カリキュラムの普及を目的とする各地の指導者育成，及び『日本語学習書』をはじめとする国定教材の作成が主な内容となっている.

〈研修タイプ３〉地域における教員研修

国家教育省の主催により行われる．講師として国際交流基金派遣専門家及び青年日本語教師が参加している．94年カリキュラム施行後はカリキュラム普及のための指導と日本語力向上のための指導が中心となっている.

〈研修タイプ４〉　日本での研修

日本で行われる研修のすべてを含む．このタイプ以外の研修はすべてインドネシア国内で行われているものである.

〈研修タイプ５〉青年日本語教師の派遣

国際交流基金派遣の青年日本語教師が各地域の配属校において１年単位で行う，教師に対する指導.

次に，研修の内容を大きく以下の５つの指導タイプに分け，それぞれの研修と指導タイプに関して同じ質問を行った．５つの指導タイプは以下の通りである.

〈指導タイプ１〉『日本語学習書』の使い方に関する指導

〈指導タイプ２〉『日本語学習書』以外の教材の使い方に関する指導

〈指導タイプ３〉教材の作り方に関する指導
〈指導タイプ４〉教授法に関する指導
〈指導タイプ５〉教師の日本語能力の向上に関する指導

これらの研修タイプ及び指導タイプについて，指導を受けた経験の有無及びその後の教材作成について質問し，それぞれ５段階評価で回答してもらった．そして研修参加の有無とその後の教材作成について分析を行った．また，教材出版経験，教材作成にかかる費用，教材作成にかかる時間についても質問し，それらと研修後の教材作成について分析を行った．これらの分析についての考察を以下に述べる．

３－６－２．各研修の「教材出版経験」への影響

「今までに教材を出版したことがありますか」という質問に対し，「はい」と答えた教師は11.4%，「いいえ」は88.6%であった．（表５.を参照）

次に，上記の５つのタイプの研修におけるそれぞれの（１）から（５）の指導タイプの，教材の出版経験への影響をクロス集計により検定したところ，教材出版経験に影響している研修及び指導のタイプは表の通りである．表のように，５つの研修タイプのうちインストラクター候補研修，日本での研修，青年日本語教師の３つのタイプの指導に影響が見られた．

インストラクター候補研修に関しては，教材作成に関する指導が教材出版経験に影響している（$p<.001$）．また教授法に関する指導も影響している（$p<.001$）．

また，日本での研修については４つのタイプの研修が影響している．具体的には『日本語学習書』

表５．教材出版経験に影響している研修及び指導のタイプ

研修タイプ	指導タイプ	χ２値	p値
1. 地域の日本語教師会	（1）『日本語学習書』の使い方	8.22※	
〃	（2）『日本語学習書』以外の教材	0.19	
〃	（3）教材の作り方に関する指導	2.597	
〃	（4）教授法に関する指導	3.457※	
〃	（5）教師の日本語能力の向上に関する指導	0.036	
2. インストラクター候補研修	（1）『日本語学習書』の使い方〃	10.910※	
〃	（2）『日本語学習書』以外の教材〃	11.302※	
〃	（3）教材の作り方〃	13.999	**
〃	（4）教授法〃	12.758	**
〃	（5）教師の日本語能力の向上〃	14.778※	
3. 地域での教員研修	（1）『日本語学習書』の使い方〃	0.538	
〃	（2）『日本語学習書』以外の教材〃	0.012	
〃	（3）教材の作り方〃	1.186	
〃	（4）教授法〃	1.625	
〃	（5）教師の日本語能力の向上〃	0.389	
4. 日本での研修	（1）『日本語学習書』の使い方〃	8.118※	
〃	（2）『日本語学習書』以外の教材〃	9.949	*
〃	（3）教材の作り方〃	11.094	*
〃	（4）教授法〃	10.63	*
〃	（5）教師の日本語能力の向上〃	10.63	*
5. 青年日本語教師の派遣	（1）『日本語学習書』の使い方〃	0.188	
〃	（2）『日本語学習書』以外の教材〃	4.019※	*
〃	（3）教材の作り方〃	0.538	
〃	（4）教授法〃	0.188	
〃	（5）教師の日本語能力の向上〃	0.633	

*＝ $p<.05$ **＝ $p<.001$ ※＝期待度数５以下

以外の使用に関する指導（p＜.05），教材作成に関する指導（p＜.05），教授法に関する指導（p＜.05）日本語能力に関する指導（p＜.05）である．

青年日本語教師の指導に関しては，『日本語学習書』以外の使用に関する指導が影響している（p＜.05）．

５つの研修のうち，教師会と地域での教員研修は，教材出版経験に影響しているとは言えない．

３－６－３．各研修の研修後の教材作成への影響

３－６－３－１．地域の日本語教師会主催の勉強会

各地域の日本語教師会（MGMP Bahasa Jepang）主催の勉強会を受けた後の教材作成については，図4.のように，「とても多く」，「かなり多く」，「まあまあ多く」と答えた教師の割合の合計を見るとどの指導タイプに関しても87.5%以上となっている．また，「とても多く」，「かなり多く」と答えた教師の割合の合計では，１位が「（１）『日本語学習書』の使い方に関する指導」，２位が「（４）教授法に関する指導」，３位が「（５）日本語力の向上に関する指導」，４位が「（３）教材作成に関する指導」，５位が「（２）『日本語学習書』以外の使い方に関する指導」，となっている．

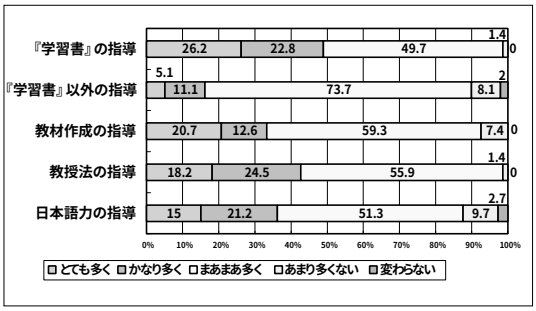

図４．教師会参加後の教材作成

次に，教師会における（１）から（５）の指導の，教材作成への影響をクロス集計により検定したところ，（１）の『日本語学習書』の使い方に関する指導に影響が見られた（p＜.001）．よって，同指導を受けた後，教師はより教材作成をしている．

３－６－３－２．インストラクター研修

これまでに行われた計５回の，インストラクター候補研修及び『日本語学習書』作成ロカカリヤへの参加後の教材作成について尋ねたところ（図５），「とてもよく作成するようになった」，「かなりよく作成するようになった」と答えた教師の割合の合計は，指導のタイプ別に見ると１位が（１）『日本語学習書』の使い方に関する指導＝82.8%，２位が（４）教授法に関する指導＝80%，３位が（３）教材の作り方に関する指導＝63.9%，４位が（５）教師の日本語能力の向上に関する指導＝59.4%，５位が（２）『日本語学習書』以外の教材の使い方に関する指導＝30.8%，となっている．

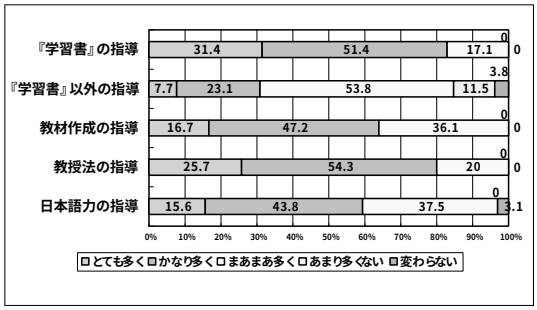

図５．インストラクター研修参加後の教材作成

次に，インストラクター候補研修における（１）から（５）の指導タイプの，教材作成への影響をクロス集計により検定したところ，影響は見られなかった．つまり，同研修に参加した教師の意見では以前よりも多く教材を作るようになったという傾向が見られるが，統計的には同研修に多く参加している教師ほど教材を多く作成しているとは言えない．

３－６－３－３．地域における教員研修

これまでに行われた地域における教員研修への参加後の教材作成について尋ねたところ，図６．のように「とてもよく作成するようになった」，「かなりよく作成するようになった」と答えた教師の割合の合計は，指導のタイプ別に見ると１位が（１）『日本語学習書』の使い方に関する指導＝61%，２位が（４）教授法に関する指導＝

53%，３位が（５）教師の日本語能力の向上に関する指導＝41.7%，４位が（３）教材の作り方に関する指導＝40.5%，５位が（２）『日本語学習書』以外の教材の使い方に関する指導＝24.3%，となっている．

次に，地域の教員研修における（１）から（５）の指導の，教材作成への影響をクロス集計により検定したところ，（３）の教材作成に関する指導に影響が見られた（p<.005）．

これらの結果から，教師の意見ではいずれのタイプの指導についても研修後により多く教材を作成しているという傾向が見られ，中でも「『日本語学習書』の使い方についての指導」が一番多くなっているが，統計的には教材作成に関する指導のみに影響が見られ，他のタイプの指導に関しては影響があるとは言えないということになる．

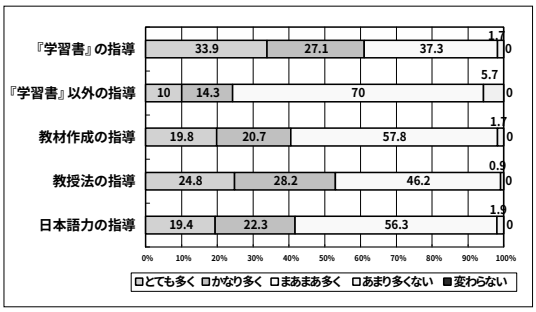

図６．地域の教員研修参加後の教材作成

３－６－３－４．日本での研修

日本での研修参加後の教材作成について尋ねたところ（図７.），「とてもよく作成するようになった」，「かなりよく作成するようになった」と答えた教師の割合の合計は，指導のタイプ別に見ると１位が（４）教授法に関する指導＝72%，２位が（１）『日本語学習書』の使い方に関する指導＝71.9%，３位が（３）教材の作り方に関する指導＝71.4%，４位が（５）教師の日本語能力の向上に関する指導＝70%，５位が（２）『日本語学習書』以外の教材の使い方に関する指導＝56.1%，となっており，（２）を除いては70%以上という高い割合となっている．

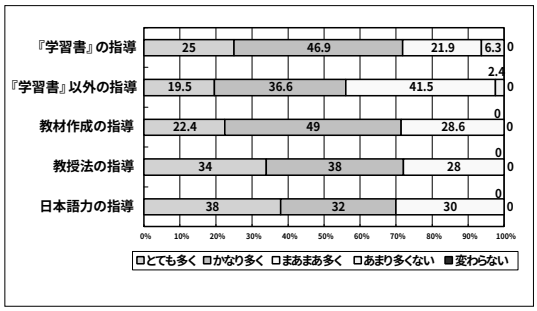

図７．日本での研修参加後の教材作成

3-6-3-5．青年日本語教師の派遣

青年日本語教師の派遣後の教材作成について尋ねたところ（図8.），「とてもよく作成するようになった」，「かなりよく作成するようになった」と答えた教師の割合の合計は，指導のタイプ別に見ると１位が（１）『日本語学習書』の使い方に関する指導＝73.5%，２位が（４）教授法に関する指導＝71.5%，３位が（３）教材の作り方に関する指導＝63.9%，４位が（５）教師の日本語能力の向上に関する指導＝59.2%，５位が（２）『日本語学習書』以外の教材の使い方に関する指導＝44.1%，となっており，「『日本語学習書』の使い方に関する指導」の割合が最も高くなっている．

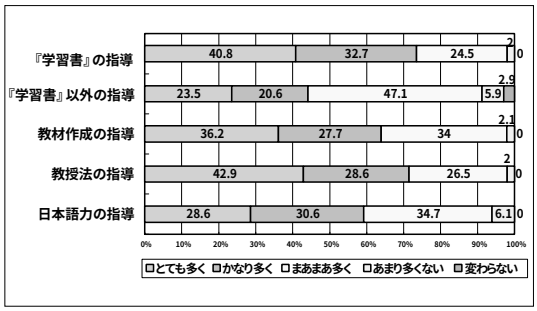

図８．青年日本語教師派遣後の教材作成

なお，５つのタイプの研修のうち，日本での研修及び青年日本語教師の派遣とその後の教材作成に関しては，アンケートの質問項目の設定が一部統一されていなかったため，統計的に影響を調べることが今回はできなかった．よって今後の課題としたい．しかし教師の意見を聞いた限りでは，これらの研修を受けた後，より教材を作成するよ

表６．研修タイプ別の指導タイプ順位表

研修のタイプ→	教師会	インストラクター研修	地域の教員研修	日本での研修	青年日本語教師の派遣
1位	（1）『学習書』	（1）『学習書』	（1）『学習書』	（4）教授法	（1）『学習書』
2位	（4）教授法	（4）教授法	（4）教授法	（1）『学習書』	（4）教授法
3位	（5）日本語力	（3）教材作成	（3）教材作成	（3）教材作成	（3）教材作成
4位	（3）教材作成	（5）日本語力	（5）日本語力	（5）日本語力	（5）日本語力
5位	（2）『学習書』以外	（2）『学習書』以外	（2）『学習書』以外	（2）『学習書』以外	（2）『学習書』以外

うになったという傾向が明らかに見られる．

また，研修タイプ及び指導タイプごとに，「とても多く」と「かなり多く」教材を作成するようになったと答えている割合の順位を表にすると（表６），各研修ともほぼ同じ結果となっており，１位は日本での研修を除いて全て「『日本語学習書』の使い方に関する指導」となっている．日本での研修では１位が「教授法に関する研修」となっているが，日本での研修では『日本語学習書』そのものを使った指導は行われていないため，それに相当するものとして判断したと思われる．

３－７．「教材作成のための費用」の「教材作成」に対する影響

３－７－１．教材作成のための費用に関する現状

まず教材作成費用については，最も多い教師が600,000ルピア（約9836円）[14]，最も少ない教師が０ルピア，となっている．平均は48,800ルピア（約800円）で，最瀕値は50,000ルピア（約820円）となっている．

次に，教材作成費用に対して教師が負担している割合を見ると（表７.），最も多い教師が100%，最も少ない教師が０％となっている．平均は75.12%で，100%負担している教師は62.4%となっており，最も割合が多くなっている．平均の48,800ルピアでも公務員の月収の約１割以上にあたり，教師の負担はやはり大きいと言えよう．

表７．教材作成にかかる費用の教師の負担率

	教師数（割合%）	累積パーセント
100%負担している	113（62.4）	62.4%
80%以上100%未満	2（1.1）	63.5%
60%以上80%未満	9（5.0）	68.5%
40%以上60%未満	25（13.8）	82.3%
20%以上40%未満	11（6.1）	88.4%
1%以上20%未満	2（1.1）	89.5%
全く負担していない	19（10.5）	100.0%
合計	181（100.0）	

平均値＝75.12%　　標準偏差＝75.64

３－７－２．教材作成のための費用と教材作成に関する分析

まず，教材作成にかかる費用に関して５つのタイプの研修後の教師の教材作成に対する影響をクロス検定したところ，「日本の研修での『日本語学習書』以外の使い方に関する指導」にのみ影響が見られたが（$p<.05$），日本の研修の他のタイプの指導及び他のタイプの研修には影響は見られなかった．この結果から，日本で『日本語学習書』以外の使い方に関する指導を受けた教師に関してはその後より教材作成に費用をかけ，また教材作成も増えているが，作成にかける費用の多さはあまり教材作成に影響しているとは言えない．また，教材作成に多く費用をかけている教師ほど研修後教材を作成しているとも言えない．

次に，教材作成にかかる費用の教師負担率の，５つのタイプの研修後の教師の教材作成に対する影響をクロス検定したところ，インストラクター候補研修における教授法に関する指導後の教材作成（$p<.05$），地域の教員研修における教材作成に関する指導後の教材作成（$p<.05$），日本での研修における『日本語学習書』以外に関する指導後の教材作成（$p<.05$），青年日本語教師による教授法の指導後の教材作成（$p<.05$）に影響が見られた．よって，費用の負担率は教材作成に影響しており，教材作成にかかる費用の自己負担率が多い教師ほど，上の指導を受けた後により多く教材を作成している．

また，教材作成にかける費用そのものよりも，

教師の負担率により影響が見られたことから，教材作成にかける金額が多い教師がより教材を作成しているとは言えないが，教師自身がより多く負担している場合ほど，より教材作成をしているということが言える．つまり，たくさん教材を作っている教師は，自分で費用を負担している率が高い．

３－８．「教材作成のための時間」の「教材作成」に対する影響

まず，教師が１週間のうち「日本語教授」に費やしている時間は（表８），１時間を60分として最高40.6時間，最低45分という結果になっている．平均は7.5時間，最も回答の割合が多いのが6.8時間である．普通高校の１週間の日本語の時間数は９時間で（１時間45分として45×９＝405分），１時間を60分として6.75時間であることから，最も割合の多いのが6.8時間となっているのは１クラスを受け持っている教師が最も多いと予想できる．しかし，45分から2440分とかなり幅があることから，複数のクラスあるいは複数の学校で教えている教師も多いと考えられる．

表８． １週間のうち教材作成に費やす時間の度数分布表

	教師数（割合%）
10時間以上	6（3.1）
8時間以上10時間未満	4（2.1）
6時間以上８時間未満	15（7.9）
4時間以上６時間未満	25（13.1）
2時間以上４時間未満	67（35.1）
2時間未満	52（27.2）
0時間	22（11.5）
合計	191（100.0）

N＝203　平均値＝168.04（分）最瀕値＝120（分）
標準偏差＝156.74

次に，１週間のうち「教材作成」に費やす時間については（表９），１時間を60分として最高が18時間，最低が０分という結果になっている．平均は2.8時間，最も割合が多いのが２時間である．８時間以上かけているのはわずか5.2%で，11.5%は「０時間」つまり全く教材を作成していないと答えており，教材作成時間は全体的に少ないと言える．

表９． １週間のうち日本語教授に費やす時間の度数分布表

	教師数(割合%)	累積パーセント
20時間以上	10（5.4）	5.4%
16時間以上20時間未満	5（2.7）	8.1%
12時間以上16時間未満	9（4.8）	12.9%
8時間以上12時間未満	45（24.2）	37.1%
4時間以上８時間未満	67（36.0）	73.1%
4時間未満	50（26.9）	100.0%
合計	186（100.0）	

N＝203　平均値＝451.51（分）　最瀕値＝405（分）
標準偏差＝364.38

次に，１週間のうち日本語教授に費やす時間の，日本語教授時間の５つのタイプの研修後の教材作成に対する影響をクロス検定により分析したところ，地域の研修における『日本語学習書』に関する指導後の教材作成（p＜.05），地域の教員研修における教授法に関する指導後の教材作成（p＜.05），青年日本語教師による『日本語学習書』以外の指導後の教材作成（p＜.05）に影響が見られた．

また，教材作成に費やす時間の５つのタイプの研修後の教材作成に対する影響をクロス検定により分析したところ，影響は見られなかった．

これらの結果から，日本語教授時間が長い教師ほど，上記の研修での指導を受けた後より教材を作成している．また，教材作成に費やす時間が長い教師ほど，研修後より教材作成しているとは言えない．

３－９．「教師の日本語力」の「教材作成」に対する影響

３－９－１．日本語能力試験受験に関する現状

日本語能力試験[15]は，インドネシアにおいては平成12年度の時点ではジャカルタ，スラバヤ，バンドン，メダン，ジョクジャカルタの５つの地域で行われている．同試験の受験経験について尋ねたところ，52.7%が「受験したことがない」と答えており，受験経験率は高いとはいえない．

次に受験経験者のうち，「合格した」と答えている級の内訳は，表10.のように「３級」の59.5%が最も多く，続いて「４級」の32.4%，「１級」及び「２級」が同数の4.1%となっている．

表10．日本語能力試験合格級

	教師数（割合%）
1級	3（4.1）
2級	3（4.1）
3級	44（59.5）
4級	24（32.4）
合計	74（100.0）

半数以上は受験経験がないため，同国普通高校日本語教師全体のレベルについて述べることはできないが，受験経験者のうち最も割合が多い３級は「初級日本語コースを修了したレベル」となっており，次に多い４級は「初級日本語コース前半を修了したレベル」(16) である．よって合格者のうち91.9%は初級レベルである．また，１級と２級に合格している教師はいずれも合格者の4.1%となっており，３級や４級と比べて割合がかなり少ない．

３－９－２．教師の日本語能力と教材作成に関する分析

次に，日本語能力試験結果の教材作成に対する影響をクロス検定したところ，青年日本語教師による日本語力に関する指導後の教材作成（$p<.05$）に影響が見られた．よって，日本語力の高い教師ほど，青年日本語教師による日本語力に関する指導の後，より教材を作成している．ただし，日本語能力試験を受験したことのある教師が全体数に対して少ないため，今後さらに詳細にわたる検証が必要である．

４．まとめ及び今後の日本の協力の可能性について

以上のアンケート調査の結果をまとめると以下のようになる．まず「教材の所有と使用」については，

（１）90%以上の教師が何らかの教材を持っており，教材そのものが全くないという状況ではない．ただし数に関しては個人差がある．

（２）『普通高校日本語学習書』は94.5%が所有しており，カリキュラムに合った教材は少なくとも１種類は持っている教師がほとんどである．

（３）教材を使用する際の理由については，「使い慣れているから」が１番多く，次に「カリキュラムに合っているから」が多い．

（４）教材作成に使用できるワープロ及びパソコンの所有率は少ないが，所有している教師の多くは教材作成に使っている．

（５）94年カリキュラム施行前と後の教材の使用及び作成については，いずれも施行後の方が施行前よりも使用頻度が増えている．

次に，「研修」「費用」「時間」「日本語力」の４つの要素の教材作成への影響については，

（１）日本語教育に関する「研修」を多く受けている教師ほど，教材をより多く作成している．「研修」の中でも，「教材作成」に関する指導のみが教材作成に影響している訳ではなく，「教授法」に関する指導や「日本語力の向上」に関する指導も影響している．

（２）「教材作成のための費用」を多く費やしている教師ほど，教材を多く作成しているとは言えない．しかし，教材作成のための費用のうち教師自身が負担している割合が高いほど教材作成が増えている傾向が見られる．

（３）「教材作成のための時間」を多く費やしている教師ほど，教材を多く作成しているとは言えない．しかし，日本語教授時間が長い教師ほど，教材作成時間が長いという傾向が見られるが，顕著ではない．

（４）日本語力の高い教師ほど，教材をより多く作成しているとは言えない．わずかながら影響は見られるが，今回の調査では教師の日本語力を客観的に測るのに限界があるため，今後さらに検証が必要である．

（５）教師自身の意見では，教材作成のために最も必要であるのは第１に「日本語力向上のための研修」という結果となっている．

これらの結果をふまえて，今後の同国における教材に関する国際協力のあり方に関する改善の可能性として，（１）教材作成のための研修の充実，

（2）教材及び機材の寄贈と研修との連携，（3）日本語力向上のための研修の3点を挙げたい．

同国では日本語教師に対する研修は既に行われており，調査でこれらの研修の教材作成に対する影響が明らかとなった．そこで研修に関しては，教師の教材作成を考慮に入れた指導の継続及び改善が望まれる．

一方，「教材の寄贈」に関しては，これらの研修とは別に行われており，研修と連携させることはこれまでのところ行われていない．寄贈された教材を活かすには，教師がその内容を理解し，アレンジできることが不可欠である．

前述のように，日本で発行された教材は海外において使用しにくいことが多い．使い慣れない教材を使いこなすのは教師にとって容易ではないことは言うまでもない．調査でも，教材使用の理由として「使い慣れているから」というのが一番に挙げられている．また，「教材の使い方を教えてほしい」という教師の意見が見られた．

そこで，例えば日本から実際に寄贈されている教材を紹介する，使い方やアレンジの仕方についての指導を研修や地域での勉強会に取り入れる，といったことが考えられるであろう．

さらに，調査結果では使用可能なワープロを所有している教師のうち87.2%が教材作成に使用していると答えている．このことから，ワープロを寄贈した場合，使用される確率は高いと考えられる．一方で12.7%は，使用可能なワープロを所有しながら，教材作成には使っていないという結果となっている．つまりワープロなどの機材についても，教材と同じく「寄贈するだけ」では十分と言えず，研修による活用の仕方に関するフォローが必要である．ワープロの使い方を研修に取り入れるなど，改善の可能性が考えられる．

また既に述べたように，教師自身の意見では「日本語力向上のための研修」が教材作成のために最も必要である，という結果となっている．日本語能力試験の合格者のうち90%以上が初級レベルであることからも教師の日本語力は相対的にあまり高くないと言える．よって日本語力向上のための研修も必要と考えられる．

以上，インドネシアの日本語教育における教材に関する現状と日本の協力について考察を行った．今後もさらなる研修の効果及び影響に関する検証を行い，より体系的な研修システムを確立することが，同国の日本語教育の発展及びそれに対する日本の協力の発展のための重要な課題である．

注記

（1）国際交流基金　日本語国際センター『海外の日本語教育の現状＝日本語教育機関調査・1998年＝』.

（2）本稿では『日本語教育事典』の定義に従うものを「教材」及び「教科書」と呼び，日本語教育において用いられる教材を「日本語教材」と呼ぶこととする.

（3）――『日本語教育事典』(1982)，662.

（4）文化外国語専門学校日本語科（1987)『文化初級日本語Ⅰ』，文化外国語専門学校，6-34.

（5）『平成12年度国際交流基金公募プログラムガイドライン』，国際交流基金.

（6）国際交流基金日本語国際センターホームページ「国際交流基金制作教材一覧」

（7）国際交流基金日本語国際センター（1999)『教科書を作ろう・中等教育向け初級日本語素材集』.

（8）「日本語教師として必要な知識・技能を修得・実習すること，またそのために行われる指導」を意味することとする．具体的には，同国で既に行われている，各地域における教師会主催の勉強会，教員研修，インストラクター研修，青年日本語教師の派遣を含めるインドネシアの高校日本語教師に対する指導全般を指す.

（9）(1) 人道的見地，(2) 相互依存関係の認識，(3) 環境保全，(4) 自助努力支援，の4つ.

(10) インドネシアの学校歴では新学期は7月から開始され，1996年7月から1997年6月までが1996/97年度とされている.

(11) インドネシア教育文化省（現「国家教育省」）では，各教科において教師研修に講師として参加する教師を「インストラクター」して認定する制度がある．語学教員研修所で行われる「インストラクター候補研修」に参加し，州政府から研修の成績，人物について評価を受けた者が

「インストラクター」として認定される.

(12) 1994年普通高校カリキュラム改定に伴い，国家教育省と国際交流基金の協力で作成された国定教材.

(13) ――『海外の日本語教育の現状＝日本語教育機関調査・1998年＝』.

(14) 1999年8月現在1円＝約61ルピア.

(15) 財団法人日本国際教育協会及び国際交流基金により行われている日本語を母語としない者を対象として，日本語能力を測定し，認定することを目的として行われている検定試験.

(16) 財団法人日本国際教育協会ホームページ http://www.aiej.or.jp/ks/ksj_top.html

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Abstract

Cooperative Development by Japan of Teaching Materials in Japanese Language Education: In the Case of Secondary Education in Indonesia

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"Lack of teaching materials" is the most common problem in Japanese Language Training world-wide, according to a survey by the Japan Foundation in 1998. The problem is not solved only by donating ready-made materials, but also by improving teachers' skills so that they are able to produce teaching materials by themselves, or to modify and adapt the donated materials which they already have.

The purpose of this study is to examine whether this is true in Indonesia and to determine exactly what is best done by the Japanese government to solve that problem. As part of the study, the kinds of teaching materials Indonesian teachers actually possess and how they use those materials were investigated.

A survey of 293 high school teachers was conducted in Indonesia. Analysis of the data indicates:

1. 90% of teachers have at least one or more sources of teaching materials.
2. Most teachers use teaching materials firstly because they are used to using them, for example because they are written in the Indonesian language, or they used it when they learned Japanese themselves. They tend not to use materials written in Japanese and published in Japan as they are not used to using them or find them hard to make use of.
3. Teachers who did their teacher education after the 1994 Curriculum was introduced produce more teaching materials than those who trained before that time.

It is concluded that the results indicate "lack of materials" means not only lack of materials in terms of number, but especially lack of "suitable" materials for the teachers' students. Ultimately, it is teachers themselves who should produce suitable materials for their students, which means modifying published teaching materials as necessary, or using other sources to create interesting and effective materials.

Therefore, it is considered that teacher education is the first priority to be focused on in cooperation for development by the Japanese government. Donating materials is still needed. However, it is not sufficient and needs to be complemented by enabling teachers to produce teaching materials relevant to their context.

中国彝族指路経における送霊・招魂／祖先移住経路言説に関する研究

―民族アイデンティティ形成との関連について―

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1．はじめに

本稿で取り上げる彝（イ）族は，中国西南部の各地に多くの下位集団として分散して居住し，これまで歴史的に長期的・統一的な政権を形成してこなかった中国少数民族の一つである．彼らの生活の中ではとりわけ様々な宗教儀礼が重視され，その中でも特に火葬[1]，位牌作り，送霊という三大葬礼[2]が重要な位置を占めている．彝族では，人の死後，これらの儀礼が盛大に執り行われる．とりわけ家支[3]全員が参加する最大の儀礼である送霊においては，司祭である畢摩（ビモ）が経典指路経中の送霊経を唱え，死者の霊[4]を祖界（代々の祖先たちの霊が住まう世界）へと導く．

しかも彝族の人々は，この祖界が，今日の雲南省の昭通一帯に相当する伝説上の祖先の移住の原点ズーズープウであると信じている．つまり，彼らは，死者の霊が祖先の移住の原点，代々の祖先たちの霊が住まう世界，現実に存在する土地という三重の意味を帯びた場所に戻ると信じているのである．

この過程は，送霊儀礼における読経を通じて逐次展開して具体的に表現される．畢摩は，儀礼の中で指路経中の送霊経によって具体的な地名を読み上げながら，祖先の移住経路を逆に辿り死者の霊を一歩一歩祖界ズーズープウへと送り届ける．しかしその際，葬礼に参加した生者たちの魂もまた畢摩の導きによって死者の霊に付き添って祖先の移住経路を辿る．そして死者の霊との別れの後，生者の魂は，畢摩の唱える指路経中の招魂経の導きによって，祖界ズーズープウから一歩一歩送霊の儀礼が行われている現地・現世へと再び引き返すと信じられている．この死者に対する送霊と生者の現地・現世回帰という葬礼プロセスは，指路経の構成とも一致している．すなわち，多くの指路経では，死者の霊を送る送霊経に生者の魂を呼び戻すための招魂経が続いて記されているのである．

祖界が持つ三重の意味を考慮すれば，この経典は，彝族の祖先がいかなる経路を経て現在の居住地に分岐して居住するに至ったのかを物語るものでもあり，実際，各地に伝わる指路経の多くは，祖界ズーズープウの様子のみならず，始祖アプドゥムウ，そして六祖[5]の移住過程についても非常に具体的に記している．そして現地・現世への回帰の過程で生者たちは，祖先の民族移動の過程を祖先たちと同じ方向で時間的かつ空間的に追体験することになるのである．

こうした意味で，送霊の度毎に繰り返し唱えられる指路経と，それが伝える祖界及びそこへと至る経路の具体的なイメージは，この儀礼に参加する生者たちにとっても，民族共通の起源と移住の歴史を心に刻み込む重要な要素となりうる可能性を持っているのである．

本論の目的は，まず第一に，果吉・寧哈，嶺福祥主編の『彝文《指路経》訳集』をもとに，経典

広島大学大学院国際協力研究科『国際協力研究誌』第 8 巻第 1 号，2001年，pp. 67–90

指路経における祖界／祖先の移住の原点に関する言説及び，送霊・招魂経路／祖先移住経路に関する言説の内容を具体的に明らかにすること，そして第二に，指路経が有する民族アイデンティティ形成の可能性について考察することにある．

なお，ここで敢えて「言説」としたのは，指路経に記された事柄が歴史的事実に基づくものであるか否かについて，現時点では断言できないからである．将来仮にこれが歴史的事実であることが考古学上あるいは歴史学上の新発見によって，あるいは遺伝子比較研究[6]等によって確認されたならば，「言説」という語は不要となるであろう．

2．先行研究

彝族の居住地域の一部は今日でも未開放地区であり外国人の立ち入りが基本的に許されていないため，彝族出身の研究者によるものを除けば，彝文経典指路経ないし送霊・招魂経路／祖先移住経路に関する先行研究の多くは文献資料に依存するか，あるいはまた，現地調査が行われる場合も，雲南省など比較的調査を行いやすい開放地区の調査に限定されてきたという事情がある．彝族に関する研究史は，13世紀にまで遡り，それ自体独立した一つの研究となりうるものであるため，別の機会に詳述するものとし，ここでは指路経ないし送霊・招魂経路／祖先移住経路に関する比較的新しい研究のみを取り上げることにする．

まず，指路経の漢語訳として，雲南省の指路経を翻訳した羅希吾戈，馬黒木呷等訳の『喀吉思』(1983)，公刊されたものではないが中央民族学院編の指路経翻訳選集『彝族六祖遷徙典籍選』(1984) がある．さらに，果吉・寧哈・嶺福祥主編の『彝文《指路経》訳集』(1993)，四川省美姑県の招魂経を翻訳した巴且日火訳の「喚魂経」(1995) がある．これらの内『彝文《指路経》訳集』は，四川，雲南，貴州の 3 省の18県に居住する18家支に伝わる指路経の漢語訳であり，『彝族六祖遷徙典籍選』の内容はすべてこの訳集に再収録されている．また，以下に列挙した研究の多くもこの訳集に依存している．

指路経及び送霊・招魂／祖先移住経路に関する二次資料としては，嶺福祥の「試論《指路経》及其学術価値」(1997) が挙げられる．この論文は，文献資料のみによる研究であるが，18県の指路経の内容を詳細に紹介している．

さらに，単なる紹介にとどまらず，経典の内容を最も深く分析した研究としては，馬学良等編の『彝族文化史』(1989)，張慶芬の「浅談彝文古籍《指路経》」(1989)，于錦銹による論文「彝族《指路経》与“拝祖教”——兼論原始宗教的定義，分類等問題」(1993a) と「从彝文《指路経》看現存彝族原始宗教系統的類型」(1993b)，朱崇先，巴莫阿依の「論彝文文献分類」(1993)，巴莫阿依の「彝文文献《指路経》語言句式試析」(1993)，巴且日火の「影・魂・霊及神——从《喚魂経》談原始宗教中霊与神的起源」(1993)，陳英の「談談彝文典籍的学術研究価値」(1993)，李力主編『彝族文学史』(1994) 第 9 章の「指路経」，胡金鰲，米正国の「試論彝族譜牒的特点及功能」(1995)，朱崇先の「論彝文典籍的史学意義和史料価値」(1997)，伍呷の「彝族認同感的発現与再発現——対川滇黔桂四省区彝文文献中有関認同感的叙述之比較研究」(1998)，朱文旭の「彝族族源及其土著文化特徴」(初稿2000) などがある．これらは，いずれも文献資料のみに基づく研究である．

これらの文献研究の内，馬学良等編の『彝族文化史』，張慶芬の「浅談彝文古籍《指路経》」，巴且日火の「影・魂・霊及神」，李力主編『彝族文学史』第九章の「指路経」は，自ら現地調査で収集したものではないが上記の翻訳集『彝文《指路経》訳集』には含まれていない指路経を資料として用いている．

文献研究と現地調査の方法を併用した研究としては，四川省大凉山を現地調査地とする巴莫阿依の『彝族祖霊信仰研究』(1994)，四川省美姑県を中心とした大凉山地域を現地調査地とする拙論「中国の彝族における葬送儀礼の人間形成機能に関する考察」(1999) がある．

さらに，二つの方法を併用し，かつ，上記の翻訳集『彝文《指路経》訳集』には掲載されていない指路経を自ら収集して資料として用いている研究として，雲南省の各彝族地域を調査対象地とする馬学良の『雲南彝族礼俗研究文集』(1983)，雲南省の南部及び南東部を現地調査地とする阿乍・莴芝の「从《指路経》看彝族与滇濮的淵源関係」

(1993)，四川省大凉山を現地調査地とする朱文旭の『彝族文化研究論文集』(1993) がある．

特に送霊経路に焦点を当てた研究で，文献研究と現地調査の方法を併用した研究としては，四川省美姑県を中心とした大凉山地域を現地調査地とする拙論「中国彝族の死生観と民族アイデンティティの形成」(2000) と樊秀麗，藤川信夫共著の「中国彝族経典《指路経》的社会教育功能」(2000)，四川省美姑県を中心とする地域を現地調査地とする巴莫曲布嫫の『鷹霊与詩魂――彝族古代経籍詩学研究』(2000) などがある．

日本人研究者によるものは非常に少ないが，栗原悟の「明代彝族系土にみられる種族連合の紐帯――彝族（ロロ・ノス系）の民族史的研究の一考察――」(1982) が挙げられる．この論文は指路経に直接言及してはいないが，六祖及び始祖についても論じ，また凉山彝族の始祖が雲南から凉山へ移住したことも触れている．さらに櫻井龍彦の「彝族の祖先崇拝と他界観」(1991) が指路経，六祖及び始祖について論じている．また，彝族の族源と歴史について論ずる中で，彝族の六祖の内，曲涅と古候について歴史的観点から若干触れている田中通彦の「彝族と西南中国民族史――大凉山彝族を中心にして――」(1999) がある．これら日本人研究者による研究は，いずれも文献資料のみに基づくものである．

欧米人による指路経及び送霊・招魂経路／祖先移住経路に関する研究はほとんどないが，彝族の歴史について論ずる中で，六祖の内古候の移住についても論じてきたアメリカの人類学者Stevan Harrellの “Field Studies of Ethnic Identity: Yi Communities of Southwest China” の漢語訳『田野中的族群関係与民族認同――中国西南彝族社区考察研究』(2000) がある．これもまた文献資料のみによる研究である．

指路経及び送霊・招魂経路／祖先移住経路に関する先行研究を全般的に見れば，現地調査に力点を置いた研究は比較的少なく，ましてや―彝族出身者と思われる著者によるものを除けば[7]―未開放地区に関する本格的現地調査はほとんどないと言ってもよい．その結果として，習俗としての葬礼と送霊・招魂経路／祖先移住経路を互いに結びつけた研究の深まりは見られないというのが実状である．

3．研究方法及び対象地域

本研究は文献研究を主たる方法とするが，これを補足し，特に習俗としての葬礼との関連を確認するために部分的に現地調査の成果も用いた．

1）文献研究：

本研究では，果吉・寧哈，嶺福祥主編の『彝文《指路経》訳集』(1993) を主たる資料として用いる．これは各彝族居住地域に伝わる指路経の訳集であり，むろん現存するすべての指路経を網羅したものではないが，これをもとにすることで，指路経の基本特徴とそのヴァリエーションをおおよそ把握することができ，従って先行研究でも取り上げられることが多い．

2）現地調査：

しかし，『彝文《指路経》訳集』によっては，この経典のいかなる部分が葬礼の中でどう用いられるのかといった具体的な点が明らかにならない．また，開放地区とは異なり漢民族文化からの影響を免れるかたちで独自の発展を遂げた未開放地区の葬礼習俗については未だ必ずしも十分に解明されているとは言えない．こうした理由から論者はこれまで以下の地域で現地調査を行ってきた．ただし本稿は葬礼の個々のプロセスについて詳述することを主目的とするものではないため，経典と葬礼の関連についての説明は必要最小限にとどめた．

①調査対象地：中国四川省凉山彝族自治州である美姑県を中心として，さらに同自治州の西昌市，昭覚県も調査対象地とした．なお，凉山彝族自治州は州都の西昌市以外，現在でも未開放地区であり，外国人の訪問は基本的に許可されていない．特に美姑県は，州都西昌市からの長い道のりをバスで一日，さらに徒歩で半日かあるいはそれ以上かけてようやく到着する最奥地に位置するため，そもそも研究者にとって立ち入ることが非常に困難な地域であり，その結果，現地出身者以外の研究者による本格的な現地調査はほとんど行われていない（図１参照）．

なお，凉山彝族自治州は，四川省の西南部に位置しており，西昌市をその中心とする．面積は 6

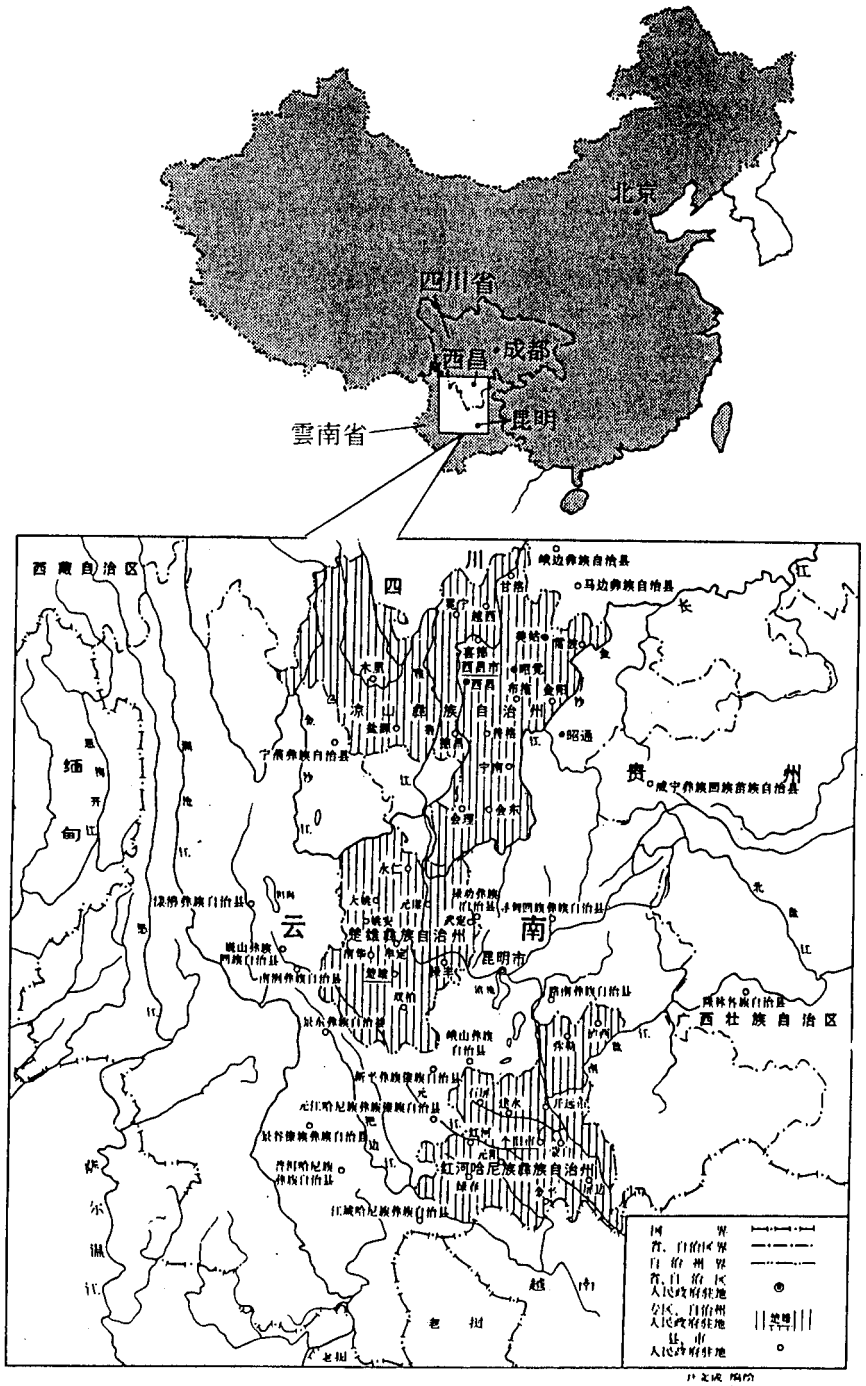


図1　彝族区域自治地方分布図

出典：『彝文経籍文化辞典』馬学良編，京華出版、1998年

『中国55の少数民族を訪ねて』市川捷護　市橋雄二，白水社1998年

万平方キロメートル，1990年の第四回全人口センサスによる総人口は382万人余り，その内彝族が162万人余りである．本研究で主たる調査対象地として選択した美姑県は，大凉山の中心部に位置し，97%以上が彝族である．その他の地域とは異なり，人を容易に寄せつけないこの地の自然環境の中で，彝族の伝統文化は独自の発展を遂げてきた．

②調査期間：第一次調査，1997年７月26日～1997年８月28日
第二次調査，1999年８月26日～1999年10月24日

③調査方法：一次調査では，中国社会科学院少数民族文学研究所副研究員巴莫曲布嫫女史，凉山彝族自治州彝族研究所研究員馬爾子氏とともに３週間美姑県に入り（馬爾子氏は一週間のみ），美姑県河古洛郷洛覚村で畢摩４人からこの村で行われている葬礼の実際及び送霊・招魂経路／祖先移住経路について聞き取り調査を行った．またこの間，美姑県の畢摩文化研究センターでも別の２人の畢摩及び２人の研究員から同様の内容（ただし美姑県全般）について聞き取り調査を行った．第二次調査では，単独で２カ月間美姑県巴普鎮柳紅郷に入った．この間，美姑県の共同葬祭場付近で行われた火葬（ボーディエ）の儀礼と巴普鎮柳紅郷で行われた位牌作り（マードゥディエ）に参加し，第一次調査で聞き取り調査を行った内容を実際に確認した．なお，送霊（ツォビィ）の儀礼は，現地が雪に覆われる冬の間に行われるのが通常であり，また，他の二つの儀礼に比べて儀礼の頻度が少いため（複数の死者のためにまとめて行われることが多い），この儀礼に直接参加することはできなかった．そのため，西昌市の凉山彝族自治州彝語委員会で１人の畢摩から美姑県拉馬郷核馬村での葬礼について，そして上述の巴普鎮柳紅郷で行われたマードゥディエの合間に４人の畢摩から同村で行われている葬礼について，さらには美姑県の畢摩文化研究センターで２人の畢摩から維其溝区拖木郷庫火莫村で行われている葬礼について聞き取り調査を行い，この点を補った．また，いずれの現地調査においても，折に触れて，畢摩以外の一般の人々に対して葬礼及び指路経から彼らが学び取った内容について聞き取りを行った．

４．指路経と葬礼との関係

彝族の祖先崇拝は，祖界という祖先の霊が住む楽土に関する信仰と神話の中で形成されてきた．彝族の人々は，現世とは別に，祖界すなわち異次元の他界が存在すると信じている．しかも，この祖界は，現実の雲南の昭通に存在すると考えられている．つまり，雲南の昭通の地は，現実に人々の居住する空間であるとともに，祖先の霊の住まう地でもあるわけである．しかも，彝族の六祖すなわち六人の祖先は，多くの経典中でズーズープウと呼ばれるこの雲南の昭通の地から出て，川（四川省の別称），滇（雲南省の別称），黔（貴州省の別称），桂（広西省の別称）に分岐して住むようになったと語り継がれており，従って雲南の地は，現に存在する土地（＝現実），祖先の霊の世界（＝信仰），祖先の移住の原点（＝歴史）という三重の意味を帯びているのである．そして死者の霊は，このように三重の意味を帯びた祖界に，決まった道筋を通って，すなわち祖先たちの移住経路を遡る形で戻って行くと信じられている（図２参照；なおこの図は，凉山彝族奴隷博物館に展示されている「凉山彝族送魂路線図」を筆者が書き写したものである）．こうした意味で，死後死者の霊が祖界という楽土へ赴くことは，遠い祖先の霊との団欒を意味し，またこの祖界への到達は，信仰・歴史・現実が融合する形で，理想郷＝祖先移住の原点への到達として，彝族の人々の人生の拠り所となる可能性をも有しているのである．

死者の霊は，火葬，位牌作り，送霊という一連の葬送儀礼を経てこの祖界へと導かれるという．論者が現地調査を行った大凉山彝族において，これらの儀礼はそれぞれボーディエ，マードゥディエ，ツォビィと呼ばれている．これら三つ儀礼の中で最終的に死者の霊を祖界へと導く最も重要な儀礼はツォビィである．

ツォビィにおいては，指路経が畢摩によって唱えられる．彼の読経の言葉は魔力と霊性を持ち，畢摩は死者の霊と交流ができ，死者は畢摩の声によって正しく導かれ，一つ一つの経由地を経て祖界へ帰ると信じられている．大凉山彝族の指路経に限らず，その他の地域のほとんどすべての指路経では，送霊経と招魂経とが連続する形で記され

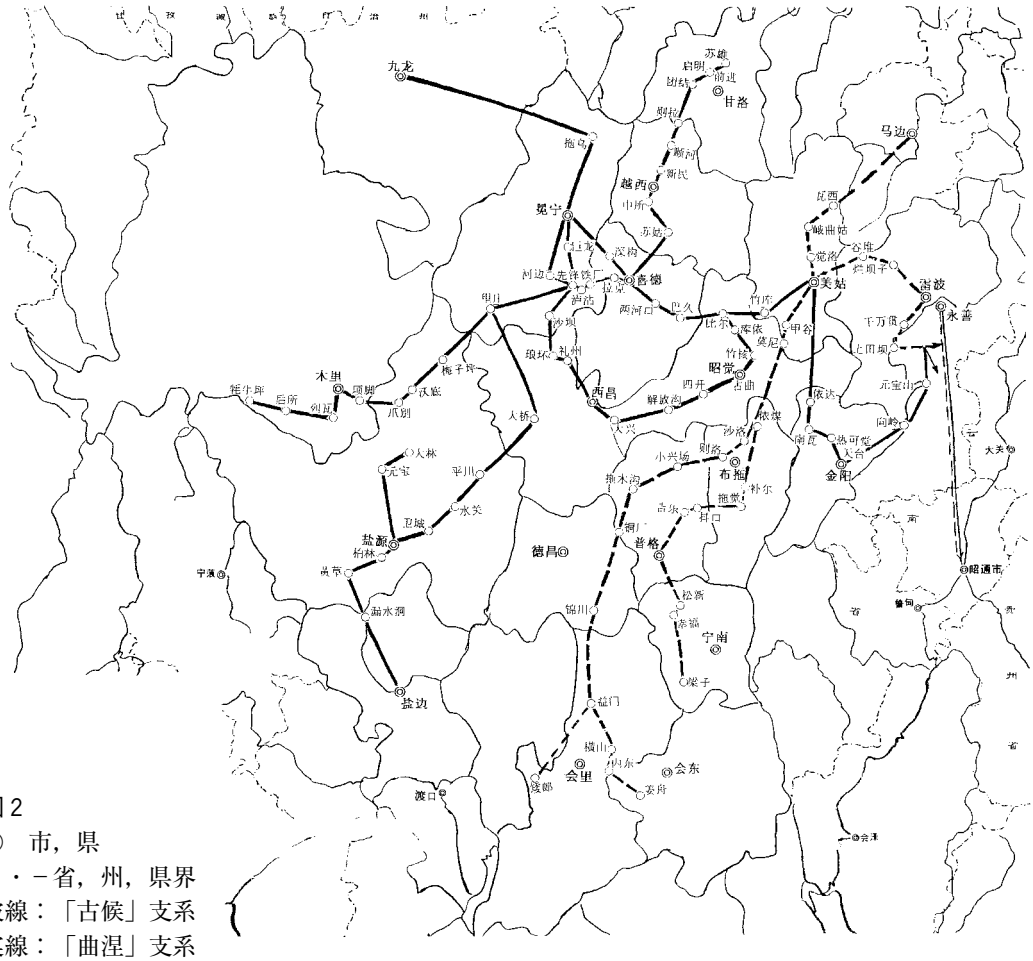
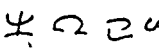
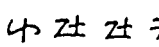


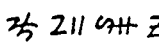
図 2
◎ 市，県
－・－省，州，県界
破線：「古候」支系
実線：「曲涅」支系
出典：凉山彝族奴隷社会博物館「凉山彝族送魂路線図」1988年，凉山彝族自治州地図より作成

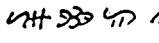
ている[8]．各地の指路経の内容から判断すれば，ツォビィにおいて死者の霊を祖界へと導くために唱えられるのは指路経の前半部分，すなわち送霊経の部分である．ツォビィ儀礼の過程における送霊経のより詳細な位置づけについては，1997年に美姑県の畢摩文化研究センターで行った２人の畢摩からの聞き取り調査，及び，1999年に西昌市の凉山彝族自治州彝語委員会で行った１人の畢摩からの聞き取り調査によって明らかになった．この調査によると，ツォビィ儀礼は「白」「花」「黒」と呼ばれる三つの過程で構成され，送霊経はこの内，「黒」の過程の中の最後から二番目の下位儀礼モーマ（位牌マードゥを岩山の洞窟に運び，そこに納める儀礼）において唱えられるという．

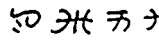
このモーマの過程で，畢摩は繰り返し経由地の地名や道程に沿って存在する山河などの風景のみならず，それぞれの経由地における祖先の偉業などについても詳しく述べなければならない．その理由について，例えば四川省のある指路経は，次のように記している．

 [pi^{33}mo^{21}la^{33}ga^{33}ɱa^{55}] **毕摩教路时，**
畢摩が道を教えるとき，

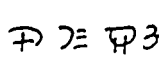
 [to^{33}zi^{33}zi^{33}mu^{33}ŋa^{33}] **认真听清楚，**
よく聞き覚えよ，

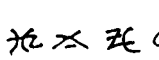
 [ŋa^{33}ɣa^{33}ga^{33}ts‘o^{33}sa^{33}] **听后必有数，**
そうすれば，

 [ga^{33}ʂo^{33}di^{33}t‘a^{21}di^{21}] **莫怕路途千里远，**
いかに遠くとも心配はいらない．

 [dzi^{33}ɱi^{33}mu^{33}mi^{33}ʂu̱^{33}] **桥名地名要记清，**
橋名も地名も道筋も覚えておかねばならない，

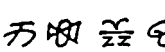
 [ga^{33}ma^{21}ɣɯ^{21}zi̱^{33}nɯ^{33}] **若不明路径，**
そうしなければ，

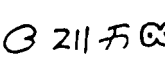
 [ŋɯ^{33}k‘ɯ^{21}vɔ^{33}ma^{21}da^{33}] **亡魂难归祖，**
死者の霊の帰祖は困難となり，

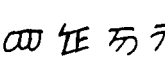
 [ɳ̊i^{55}ts‘ɻ^{33}xa^{55}mo^{21}dzi̱^{21}] **变鬼来作祟．**
鬼と化し人に祟ることになる（巴莫阿依1994：118より引用）．

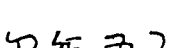
祖界への道案内は，死者の霊が無事に帰祖できるかどうかと直接関わるものであるため，特に詳細に行われるのである．

例えば，雲南省，禄勧県に伝わる指路経は，経由地の様子を次のようにリアルに描き出している．

 [mu^{33}gu̱^{33}t‘i^{55}nɛ^{21}zɯ^{33}] **天空鹞鹰子，**
空の鷹には，

 [ndi^{21}ɣa^{33}mu^{33}dzi̱u^{21}ŋo^{33}] **能见马足迹．**
馬の足跡が見える．

 [p‘u^{21}ŋgɯ^{21}a^{33}mu^{33}ɖu^{55}] **踪着祖牧马，**
祖先が馬を飼い，

 [p‘ɻ^{33}ŋgɯ^{21}ŋɯ^{33}k‘ɯ^{21}vu^{33}] **踪着祖休息，**
休憩した様子が見え，

 [ŋɯ^{33}ga^{33}ts‘o^{21}ɣa^{33}li^{33}] **寻祖迹前往．**
その跡を辿って進まねばならない（「禄勧篇」：609）．

とにかく，祖先の移住の足跡を忠実に辿らなければ，死者の霊は祖界に到着できないのである．

送霊経は，文字通り死者の霊を祖界に導くためのものであるため，上に示したように祖先の移住経路を遡る旅路をリアルに描き出しているが，それだけでなく，目的地である祖界の美しい光景，および霊が始祖アプドゥムウ，六祖，さらには各地から集まった死者たちの霊とともに，この楽土で永遠に平和に暮らす様子も生き生きと描写している．死者の霊は，この写実的に描き出された祖界での生活に新たに加わるのである．

さらに，上述の聞き取り調査によると，ツォビィの「黒」の過程の最終段階に位置する下位儀礼イージェ（招魂）では招魂経が唱えられるという．この経典には，送霊経とは逆に，祖先の移住経路すなわち祖界から現住地への移住経路が記されている．送霊経は基本的に死者の霊を祖界まで送り届けるために唱えられるものではあるが，葬礼の全参加者の魂もまたこの送霊経によって祖界の入口まで導かれるという点は特徴的である．すでに于錦銹の1993の研究（于錦銹1993a：319）と巴且日火の1993の研究（巴且日火1993：306）が述べているように，生者の魂もまたこの祖界へと通ずる門まで赴き，そこで死者の霊を見送るのである．この点については，聞き取り調査を行ったすべての畢摩から確認した．しかし，死者の霊は帰祖するとき，家族との別れを悲しむあまり，彼らの魂をも祖界に連れて行くことがあり，また，生者も死者との永遠の別れを惜しんで，ツォビィの中で死者の霊ともに祖界に迷い込んでしまうこともあると信じられている．それ故畢摩は，送霊経に引き続いて招魂経を生者のために唱え，生者の魂が死者の霊とともに逝去しないようにするのである．この招魂の過程で，儀礼に参加する生者たちは，再びリアルなイメージを伴う導きによって，しかし今度は祖先と同じ方向で移住経路を辿り，いわば祖先の移住過程を追体験するのである．

5．指路経における祖界／祖先の移住の原点に関する言説

我々は今日，果吉・寧哈，嶺福祥主編の『彝文《指路経》訳集』によって，彝族の指路経の内容をその全体的な広がりにおいて知ることができる．この訳集は，四川省の5県（普格，甘洛，喜徳，塩辺，美姑），雲南省の9県（路南，双柏，紅河，弥勒，禄勧，武定，中甸，寧蒗，羅平），貴州省の4県（大方，威寧，盤，赫章）に居住する18家支の指路経を収録したものである．これらの中では合計678の地名とともに，多くの山河の名称，水名が挙げられているが（嶺福祥1997：58），目的地の現地名が特定できていない羅平の場合を除いて，その他17の指路経の送霊経路の終点はいずれも雲南の昭通一帯にある．これを踏まえて馬学良は，この訳集の序の中で以下のように述べている．

「指路経が移住経路を遡って死者を祖界に導き，祖先の発祥地へと導くため，一山一水，一草一木，一地一物を忠実に記録するばかりではなく，指路経を用いて，近くから遠くに至るまで一つ一つの経由地名を読み続ける．もし我々がすべての地名と経路を結びつけて考証することができたなら，彝族の祖先の明瞭な移住地図を描き出し，またそれによって彝族発祥の地を明らかにすることができるだろう．従って私は，指路経における記載を調べることで，彝族の歴史的源流の研究が可能であると思う」（果吉・寧哈，嶺福祥1993：序2）．

付言すれば，日本でも『彝文《指路経》訳集』の出版以前に，栗原悟の論考が，指路経の内容を直接取り上げてはいないが，招魂の出発点（＝送霊の目的地）と祖先の移住の原点との関連についてその重要性を指摘していた．彼は，フランスの研究者A.F, Legendrenの“Far-West Chinois; Races aborigenes. Les Lolos. Etude Ethnologique et Anthropologique”（1909），中国の研究者林輝華の『凉山夷家』（1947），馬学良の「倮文作斎経訳注」（1949），馬長寿の『南詔国内的部族組成和奴隷制度』（1961）などの先行研究に基づいて，凉山彝族に伝わる招魂／祖先移住の出発点について次のように述べている．

「凉山イ族は雲南の昭通一帯から移ってきたものらしく，凉山の筆母（ビモ）が招魂の儀式あ

るいは死者の送霊Death Roadを行なう時，みな祖先たちが移動してきたと考えられる雲南昭通あたりから凉山までの各地名を経典の中で念じていると報告されている．そして，凉山彝族の始祖古候と曲宜（涅）の率いる族団が凉山に進入する以前は雲南の北部昭通，東川（会澤）の地にその原郷があったとみなされている」（栗原悟1982：113）．

例えば，凉山彝奴隷社会博物館が，1988年に四川省の古候と曲涅の二つの支系に属するいくつかの家支に伝わる指路経から作成した「大凉山彝族送魂路線図」（図２参照）は，彼らの指摘の正しさを裏付けるものであろう．しかし，『彝文《指路経》訳集』に収録された18家支の指路経の中に具体的に記された祖界／祖先の移住の原点，そして送霊・招魂／祖先移住経路は，未だこの「大凉山彝族送魂路線図」のような移住地図としては完成されていない．そこで本稿では，まず，『彝文《指路経》訳集』の注釈をもとに18家支に伝わる祖界／祖先の移住の原点について確認し，さらに，さしあたり18家支の内の６家支について，その送霊・招魂／祖先移住経路図を作製した．

『彝文《指路経》訳集』に収録された18家支の指路経の中では，祖界／祖先の移住の原点の地名は次のようになっている．なお（　）内は現在の地図上での位置及びこれに関する説明である．

四川省　喜徳県：莫木普故（昭通付近だが詳細は不明．その１つ手前の経由地として瑪洛依土の地名が見られる．これは現在の雲南省昭通城の西北数十キロ付近の洒漁河に位置する葡萄井という泉である）（「喜徳篇」：650）

塩辺県：地吐戈俄（雲南省内の地名とされるが詳細は不明）（「塩辺篇」：655）

美姑県：額木普古（昭通付近だが詳細は不明．ただしその19手前の経由地として瑪洛依曲の地名が見られる．これは泉の名であり，現在の雲南省昭通洒漁河葡萄井にあたる）（「美姑篇」：662）

甘洛県：茲茲地各（昭通会訳付近）（「甘洛篇」：645）

普格県：莫木古爾（昭通付近．７つ手前の経由地に阿勒依曲の地名が見られる．これは泉の名であり，現在の昭通洒漁河葡萄井にあたる）（「普格篇」：641-642）

雲南省　路南県：塞瑪当山（昭通付近．１つ手前の経由地に梅来液尺の地名が見られる．これは泉の名であり，現在の昭通洒漁河葡萄井にあたる）（「路南篇」：583）

双柏県：納鉄（現在の地名は不明．「紅河篇」の注釈によると雲南省東北部の滇池付近に位置する）（「双柏篇」：593，「紅河篇」：598）

紅河県：納鉄（現在の地名は不明．雲南省東北部の滇池付近に位置する）（「紅河篇」：598）

弥勒県：鐘寨柯么（昭通の東北に位置する．１つ手前の経由地に密力雨噎の地名が見られる．これは泉の名であり，現在の昭通洒漁河葡萄井にあたる）（「弥勒篇」607）

武定県：歹吐羅烏（山あるいは川の名だが詳細は不明．１つ手前の経由地に麻奴以赤の地名が見られる．これは泉の名であり，現在の昭通洒漁河葡萄井にあたる）（「武定篇」：619）

禄勧県：更奪哄索（昭通付近．３つ手前の経由地に麻奴以遅の名がある．これは注釈によると麻奴以赤と同一であり昭通地域とされる．なお「武定篇」の注釈によるとこれは昭通洒漁河葡萄井にあたる）（「禄勧篇」：614，「武定篇」：619）

中甸県：莫木嘎拖（昭通付近．１つ手前の経由地に莫木普古の地名が見られる．これは「喜徳篇」の目

的地莫木普故と同一である．また7つ手前の経由地として瑪洛依曲の地名が見られる．これは泉の名であり，現在の昭通洒漁河葡萄井にあたる）（「中甸篇」：625）

寧蒗県：耿勒嘎仁（昭通付近だが詳細は不明．ただし11手前の経由地に茲茲仆烏［ズーズープウ］の地名が見られる）（「寧蒗篇」：625）

羅平県：天門撣（現在の地名は不明）（「羅平篇」：634）

貴州省　大方県：点倉実液（雲南省内の会澤のあたり）（「大方篇」：672）

威寧県：欧那峨邹（雲南省内の地名だが詳細は不明）（「威寧篇」：680）

盘　県：足者発尼（昭通付近だが詳細は不明．4つ手前の経由地に麻哈液持の地名が見られる．これは昭通洒漁河葡萄井にあたる）（「盘県篇」：687）

赫章県：徳紀大城（雲南省東川地域）（「赫章篇」：693）

残念ながら，現在のところ，これら経典中の地名に相当する現在の地名が必ずしも確認できていないため，目的地点を実際に地図に書き込むことはできないのだが，少なくとも多くの指路経において，雲南省昭通地域が目的地点となっているということ，またそこへと至る経由地の一つに，あるいは目的地そのものとして，昭通洒漁河葡萄井が挙がっていることがわかる．以上のことから判断すれば，馬学良や栗原悟が指摘する通り，実際に祖界／祖先の移住の共通の原点が雲南省昭通の付近に集中していると言えるだろう．

6．『指路経』における送霊・招魂／祖先移住経路言説

次に，『彝文《指路経》訳集』に収録された6つの家支の指路経をもとに，送霊・招魂／祖先移住経路を詳細に見てみよう．なお，以下の経路中の地名は彝語の漢語表記であり，括弧内は現在の地名である．現在の地名は，地名録『四川省凉山彝族自治州西昌市』をはじめ，喜徳県，塩辺県，美姑県，甘洛県など17地域の地名に関する地名録，『彝文《指路経》訳集』の注，及び，嶺福祥氏及び瓦渣克基氏による教示によって論者が自ら付記したものである．また，図3から8は，これらの地名をもとに論者が新たに作成したものである．

まずは四川省大凉山地域の4県，すなわち喜徳県，塩辺県，美姑県，甘洛県に居住する家支の指路経によって，その送霊経路を跡づけてみよう．ただし，送霊の最終目的地ないし招魂の出発点は，なお不明な点も多いが，地図上ではさしあたり昭通とした．また，各指路経の注釈において，ズーズープウの地点が同定されている場合にはこれを書き込んだ．

四川省，喜徳県の指路経における送霊経路は次の通りである．

瓦吉山（瓦吉）→拉布依斗→阿渣克祖（尼婆）→阿侯達洛→木爾各烏→俄勒莫廸→巴什索竹→蜀紅洛嘎→琼祖木勒→爾布覚哈（比爾）→勒必定各→阿吉克底→瓦祖補勒→依子吉拖（申果庄）→阿点格朴→点惹依体→蘇思波西→子什覚嘎→勒俄尼必→勒紅爾勒→洛額碓阿→嘎七覚哈→拉機波祖（拉吉）→汝惹覚哈→爾石覚底→依阿爾留→烏阿機則→俄克依達→依石洛莫→依石瓦王→洛莫索総→司茲嘎譲→阿爾嘎加→凹各故烏→木子火朴→阿鐘沙尼→徳布尼拖（候播勒拖）→依子且拖→利木美姑（美姑）→来烏依嘎→色依洛故→莫尼思達→思偉波祖→莫尼爾俄→莫尼木各→子子都俄→覚洛瓦依→索爾嘎仁→者哈嘎仁→火洛嘎仁→莫木特勒→阿莫特吉→火各日克→爾基嘎布→木尼西偉→木尼古爾（木尼古爾）→木尼巴体（金陽）→木尼汝哈→吉尼勒拖→鐘克吉爾→鐘克瑪体→苦哈思爾→苦哈苦覚→甫必爾留→木茲拉火（昭通）→木爾勒拖（昭通）→木尼此此（昭通）→思色哈尼（昭通）→瑪洛依土（昭通葡萄井）→莫木普故（昭通＝ズーズープウ）（「喜徳篇」：647～648）

またこの経路を地図にしたものが図3である．この四川省，喜徳県の指路経によれば，現地彝族の送霊経路は，70の地名を経ながら今日の凉山喜

徳から越西へと越境して行くものである．この経路は縮尺の関係上地図中に示すことはできないが，瓦吉木という山から，喜徳尼婆地域，普雄，昭覚，比爾，越西，美姑，金陽などを経て，最終的には雲南の昭通地域に入る．

次に四川省，塩辺県の指路経における送霊経路は，次の通りである．

波史瓦拖（岩口）→達洪諾古（国勝）→冲爾洪普（元宝）→達耿補沙（柏林）→曾莫覚古（塩源）→巫池勒解（衛城）→吉体納呵→達特果普（土工鋪）→哈竹解沙（平川）→達拉瑪普（禄瑪鋪）→達敏資普（金河）→諾依江辺→達丁礼普（得力鋪）→吉覚果沙（磨盤）→達吉孜城（佐君鎮）→哄洛勒解→俄卓暑莫（邛海・西昌）→阿拉姆（普詩）→地坡克爾（撒拉地坡）→洛洛依達（解放沟）→地坡竹核（竹核）→阿甲則果（則覚）→地坡瓦崗→沙崗伙普→吉土地莫（金曲）→俄魯魯古→俄魯地嘎→莫夫署覚→補坡勒解→魯俄納比→羅洪爾列（井叶特西）→安洪吉阿→儒惹波克→依諾諾阿（谷堆）→史吉波西（山棱崗）→吾阿吉則→叶阿爾尼→阿期署尼→莫波署諾→蘇打嘎史→波史吉古→波史索卓→拉依尼覚→拉依木克→阿卓署敏（馬湖）→則莫瓦拖→史維洛古→儒波瓦則→儒波嘎古→利木美姑（美姑）→麻覚尼科→莫木沙嘛→執土戈俄→阿苦浦嘎→依民爾打→普博則果→博及博尼→索則哈俄→格阿古土→木尼古爾（木尼古爾）→木尼巴体（金陽）→木尼儒基→徳布嘎覚→徳布嘎合→徳布戈俄→徳施戈俄→畢哈戈俄→待爾戈俄→洪洛戈俄→地吐戈俄（「塩辺篇」：651～653）

図３：四川省，喜徳県「指路経」における送霊経路

図4：四川省，塩辺県「指路経」における送霊経路

またこの経路を地図にしたものが図4である．この四川省，塩辺県の指路経によれば，現地彝族の送霊経路は，70の地名を経ながら今日の塩辺の岩口から，国勝地域，塩源，金河，西昌，昭覚の竹核，美姑の井叶特西，雷波地域を経て，再び美姑に戻って金陽地域などを経由し雲南省に入る．

さらに四川省，美姑県の指路経における送霊経路は以下の通りである．

各什瓦木（地洛瓦依）→川茲依吉→牛果依打（牛牛坝）→瓦拖波西→嘎伙茲巍（子威）→利木美姑（美姑）→洛俄依嘎（洛俄依嘎）→舍亜爾苦（慶恒）→巴苦爾覚→沙哈馬革（日哈）→吉哈儒史→尼古依克（尼古依達）→果阿古曲（爾覚西）→撮那武祖→木尼席威（熱柯覚）→木尼地各（金陽）→木尼熱嘎→木尼儒基→陳各則皮（則果）→都羅額里→古爾吉史（岩脚）→爾吉古布→甲尼勒体（元宝山）→甲尼勒烏→措克米貼（永善）→措克米烏→布克吉洛→耿查克合→耿查俄合→古阿史爾→古阿米吉→戳合索洛→戳合索祖→茲茲地各（昭通）→茲茲拉甲（昭通）→茲茲拉合（昭通）→茲木惹澤（昭通）→茲木拼里（昭通）→茲木伙澤（昭通）→耿戳地各（昭通）→拉里所日（昭通）→木尼勒体（昭通）→索此俄解（昭通）→吉曲博木（昭通）→瑪洛依曲（昭通葡萄井）→徳布索比（昭通）→索什里吉（昭通）→耿戳則尼（昭通）→勒茲古楚（昭通）→阿格伙普（昭通）→阿格伙爾（昭通）→則底尼俄（昭通）→啓次古楚（昭通）→格楚尼洛（昭通）→耿戳尼洛（昭通）→額本普古（昭通）→勒俄維体（昭通）→沙俄尼洛（昭通）

→核曲山（昭通）→牧曲山（昭通）→嘎布依政（昭通）→木曲地撒（昭通）→勒波依体（昭通）→額木普古（昭通＝ズーズープウ）（「美姑篇」：656～660）

またこの経路を地図にしたものが図５である．四川省，美姑県の指路経によれば，現地彝族の送霊経路は，64の地名を経ながら今日の美姑の地洛瓦依から，美姑，昭覚の慶恒，日哈，金陽，雷波地域の岩脚，元宝山を経て，雲南省の地域を越境し，永善，葡萄井を経由するものである．

上述のように，指路経は，多くの場合送霊経と招魂経から成る．というのは，通常，死者の霊を祖界へと送る送霊儀礼に続いて，儀礼参加者の魂を祖界から現世へと呼び戻すために招魂が行われるからである．その際，招魂経路は祖先の移住経路と一致することになる．以下，四川省，甘洛県の指路経を例に取り，招魂経路についても見てみよう．ただしこの経典において招魂経に相当する部分は贖魂経と呼ばれている．

茲茲地各（昭通＝ズーズープウ）→木尼依簿→木尼巴体（金陽）→木尼古爾（古爾）→木尼丕諾→利木斯補（美姑）→利木依打（佐戈依達）→斯木布約（補約）→利木竹核（竹核）→利木昭覚（昭覚）→拉哈依烏（四開）→撒拉地頗（撒拉地頗）→彭洛拉打（解放沟）→普署嘎拖（普詩）→木体東勒（大興）→勒格俄卓（西昌）→俄卓打日（泸山）→諾依爾覚（安寧）→斯碩斯咪→阿嘎地拖→阿嘎地莫（沙坝）→瀘沽解沙（瀘沽）→耿草

図５：四川省，美姑県「指路経」における送霊経路

図6：四川省，甘洛県「指路経」における送霊経路

瓦解（巨龍）→阿几畢爾→冕易卓諾（冕寧）→喜徳拉達（喜徳）→俄羅山下→俄羅則俄（窩洛几峨）→俄羅蘇姑（書古）→里頂瓦古（白泥）→叶澤解沙（中所）→烏拖城内（越西）→徳図解杆（大屯）→達爾瑪地（新民）→洛洛木各→嘎沙嘎久（沙嘎）→冥牟山下（碧鶏山下）→爾此覚補→阿祖坝嘎（斯覚）→依烏署雑（依烏）→木諾爾苦→阿扎鉄瑪→地吐山麓→坝哈依打→達依節尼→麻卡各日→阿補勒托→史挙科→打依嘎→瑪嘎依→則洛依打（則拉）→深惹瓦烏→達特覚古→依徳阿莫→特克俄清→沙嘎勇玖（玉田）→赤普覚各→達沙覚洛→阿爾省曲→約惹覚莫→阿畢惹木→則各邛覚→尼波勒節→洛俄解沙（波波奎）（「甘洛篇」：643～644）

またこの経路を地図にしたものが図6である．この招魂経路は，63の地名を経ながら今日の雲南の昭通から越境して金陽，美姑，昭覚，西昌，冕寧，喜徳，越西，甘洛を経て，最終点の波波奎に入る．波波奎は加乃家支の中心居住地である．

さらに，目的地により遠い家支の指路経における送霊経路をいくつか見てみよう．まずは，雲南省西部の中甸県の指路経における送霊経路である．

程索拉達（中甸）→土官村（土官村）→雪莫卡哈→木主瓦阿→安拉解沙（俄亜）→古迪阿莫→波達祖布→落吉伙哈→洞窩洛阿→洛咱依嘎→俄亜橋辺→阿嘎嘎托→里拉則希→里拉覚名→阿果拉達→阿果厚普→木里爾西（木里）→木里則各→木里解

烏（卡拉）→苦巴地阿→興掘各阿（倮波）→苦爾亜莫（苦爾亜莫）→亜及伙阿→卡拉伙普→卡拉勒解→卡拉依嘎→可可拉達→達普子阿→戳都営便→波古阿莫→解覚阿莫→馬覚阿莫→史巴俄几(泸寧)→雅砻江辺→拉扯各岩→金細金波→爾思解沙→火図山阿→馬図沙 →約拉苦阿（馬頭）→嘎曲依阿→火克日普（哈哈）→卓諾解沙（冕寧）→洗苦橋辺→比図覚莫→果撤果勒→麻史普組→馬拖沙河→哈咱勒解（小山）→紫沙城外→則封勒解→哈布卓嘎→俄則哈布（哈布）→俄阻洛阿→依洛覚烏（覚吾）→依洛勒拖→斯低波系→蘇姑勒補（書古）→蘇姑波解→掘阻勒解→阿木洛阿→几波依嘎→魯省嘎烏→魯省嘎拖→嘎青勒拖→尼兄洛莫(布覚来俄)→尼乍俄覚（竹阿覚）→卓嘎依達→倮伍勒嘎→覚伙覚莫→地覚勒解→吉図石橋→巴切甲谷→古諾古→波洛依嘎→阿節曲卡→司惹依体→子史木覚→嘎莫主卓→瓦渣甲谷→冲里洛木（比爾）→羅洪魯勒→魯俄納居（竹核）→魯勒依古→補約司几（補約）→斯依洛姑→俄木橋辺→処雀橋→嘎几魯資→嘎哈処曲（竹庫）→尼合山下（牛牛坝）→利木莫姑（美姑）→利西尼品（馬頚子）→体使烏者（上田坝）→嘎俄古楚（雷波）→古俄澤阿→比哈嘎節（永善）→司勒嘎嘎→徳布嘎節→木茲金尼→木茲拉火（昭通）→瑪洛衣曲（昭通葡萄井）→木茲品尼（昭通）→木諾西卓（昭通）→木尼儒基（昭通）→木尼儒哈（昭通）→莫木甲谷（昭通）→莫木普古（昭通＝ズーズープウ）→莫木嘎拖（昭通）(「中甸篇」：621～623)

またこの経路を地図にしたものが図７である.

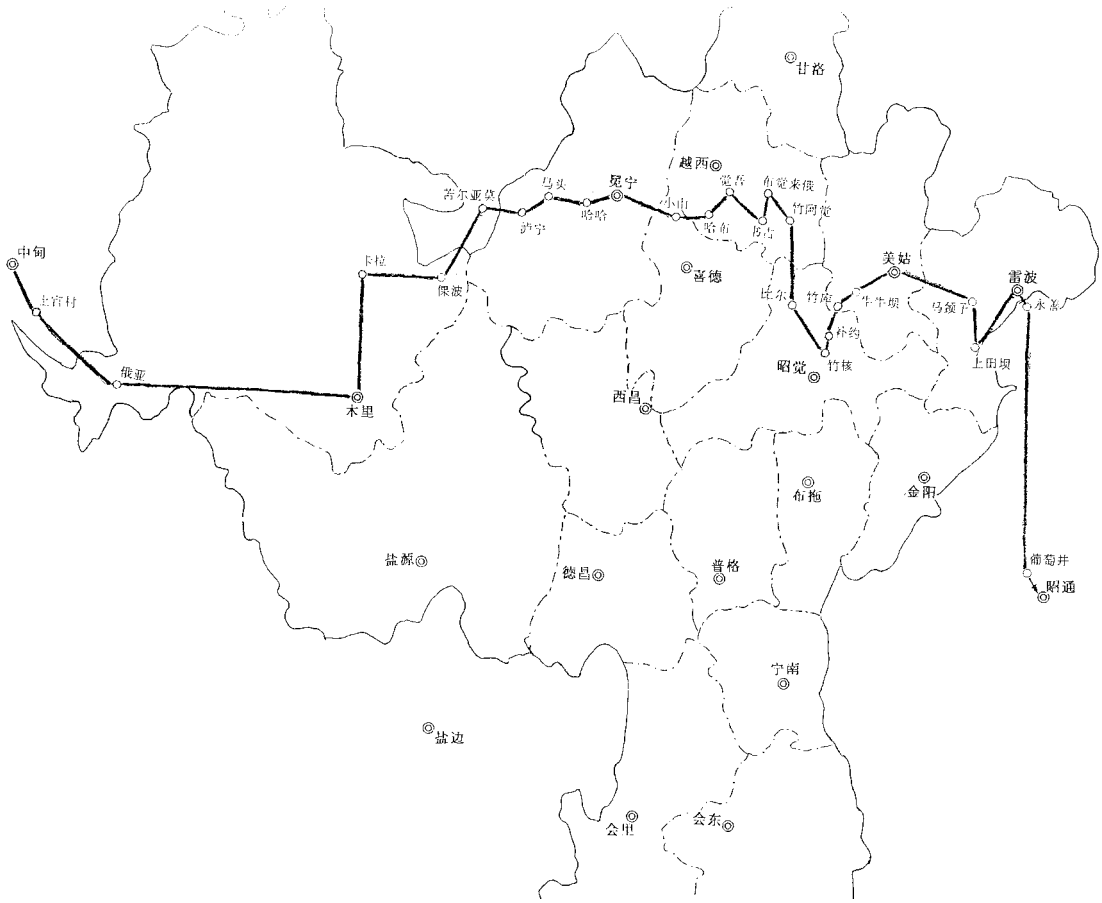


図７：雲南省，中甸県「指路経」における送霊経路

この雲南省，中甸県の指路経によれば，現地彝族の送霊経路は，108の地名を経ながら今日の雲南の中甸から出発し，四川省の地域に入って，木里，孜藏族自治州九龍県内の苦爾亜莫，冕寧，喜徳地域の小山，越西地域，昭覚地域，美姑，雷波などを経て，雲南省の地域を越境して，永善，葡萄井を経由するものである．

次に，同じく目的地により遠い雲南省，寧蒗県の指路経における送霊経路である．

格瓦勒托（寧蒗）→瓦格火普→烏蒙火阿→俄撮巴阿→叉覚拉達（央脚）→查莫布依→查莫爾苦（塩源）→巫池爾苦→烏池解沙（衛城）→几丁普阿→朶果仆阿（土工鋪）→赫処解沙（平川）→喇嘛仆阿（禄瑪鋪）→賈子普阿→雅砻江辺→丁里普阿（得力鋪）→古沙普阿→吉子洛挙→俄卓蜀莫（邛海・西昌）→牛洛勒解（解放沟）→瑪史洛阿→布魯仁阿→阿京則哥→狄坡克爾→阿拉姆阿→烏狄勒五→烏狄勒托→仜嘎火普→古洛波桑→波洛火鳩→金曲底莫→金曲拉達→俄洛司火→金曲火普→木火格則→布波勒解→拉洛依達→落洛依達→克苦尼覚→阿木洛覚→魯火魯勒→魯夜娜比（竹核）→鉄莫哥西→古其節阿→日仁波克→偰依尼阿→斯基波西→斯沙木阿→依阿魯乃→烏阿几則→洛色吉阿→布曲洛阿→仁史瓦依→色底嘎惹→阿其書洛→波斯甲谷→波斯拉依→拉哈液烏（牛牛坝）→利木莫姑（美姑）→魯吾依嘎（洛俄依甘）→斯黒洛古（甘多洛古）→日仁張則→日波甲古→則莫瓦烏→比爾瓦托（天台）→莫尼斯丹→沙瑪甲谷（金陽）→阿苦火甲→沙瑪次勒→耿氐魯尼（大金貝）→耿

図８：雲南省，寧蒗県「指路経」における招魂経路

斯史烏→波史波撦→茲茲仆烏（昭通＝ズーズープウ）→木茲品尼（昭通）→木茲拉火（昭通）→谷戳戳合（昭通）→谷合山（昭通）→叮黒山（昭通）→貝哈嘎仁（昭通）→斯爾嘎仁（昭通）→曲尼嘎仁（昭通）→古候嘎仁（昭通）→丁基嘎仁（昭通）→耿勒嘎仁（昭通）（「寧蒗篇」：626～628）

またこの経路を地図にしたものが図８である．この雲南省，寧蒗県の指路経によれば，現地彝族の送霊経路は，83の地名を経ながら今日の雲南省の寧蒗から出発し，四川省の地域に入って，塩源，西昌，昭覚地域，美姑，天台，金陽を経て，雲南省の地域を越境し，大金貝を経て，最終的には昭通地域に入る．

なお，それぞれの経路を示す地図において，昭通までの最終行程に関しては，経典中で非常に細かい地名が挙げられているのであるが，ここでは縮尺の関係上省略せざるを得なかった．

その他にも目的地雲南の昭通により近い家支の指路経もあるが，例えば貴州省，大方県の指路経の場合，送霊経路は，大方から納雍，水城を経て，赫章威寧へ辿り，雲南省の会沢に入るものであり，その際経由地の数は48へと減少している．しかしいずれの場合も，現実に存在する具体的な地名がすべて彝語で呼ばれる．

ここでは『彝文《指路経》訳集』に収録された18家支のうち，６つの家支の指路経の送霊・招魂／祖先移住経路についてしか詳述しなかったが，他の12の家支の経路については別の機会に論じたいと思う．しかし，いずれにせよ，ここで取り上げなかった他の家支の経路も，最終的には現在の雲南省昭通一帯に至る．

７．民族アイデンティティ形成の可能性

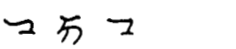
彝族における民族アイデンティティの問題は，中国学術界で長い間論争の的となってきた．例えば，伍呷「彝族認同感的発現与再発現」（1998）は，四川，雲南，貴州，広西の四省に伝わる，指路経をはじめとする彝文文献中に見られる祖界ズーズープウ，始祖アプドゥムウ，六祖の物語と，民族アイデンティティの形成との関連について論じ，また葬礼との関連についても簡単に触れている．日本では，先にも触れ通り，すでに栗原悟「明代彝族系土司にみられる種族連合の紐帯」（1982）が，歴史学的観点から，彝族に伝わる六祖の物語と民族アイデンティティの形成との関連について論じており，さらには葬礼との関連についても触れている．ただしここでは，指路経は取り上げられていない．さらに櫻井龍彦は，彝族の民族移動が歴史的事実であるか否かについては留保しつつ，葬礼と祖界，始祖，六祖との関係について簡単に触れている．

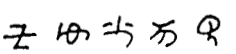
> 「霊魂は祖先がかつて歴史上あるいは伝承上，移動した経路を回帰するため，その行程は地域ごとのイ族のよって相違する．しかし最終的にその霊魂が帰着する目的地は同一である（もちろん厳密には一致しない）．つまりリネージは，〈六祖〉のようにそれぞれの始祖をもつが，その始祖に系譜上連なるリネージ内の祖先は，最終的には，各リネージをさらに統合する民族全体の始祖（上の例では篤慕）のもとに帰るわけである」（櫻井龍彦1991：106－106，傍点筆者）．

論者は，これらの研究を踏まえつつも，葬礼との関わりをより明瞭に示し，また指路経に記された事柄をさしあたり言説として捉えて，指路経が持つ民族アイデンティティ形成の可能性について論じることとする．

彝族における民族アイデンティティ形成のあり方は，すでに述べた祖界／祖先の移住の原点及び送霊・招魂／祖先移住経路に関する言説のみならず，各地に伝わる指路経をはじめ他の多くの彝文経典の中に記された始祖アプドゥムウや六祖に関する言説とも密接に関連している．

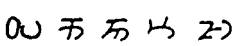
アプドゥムウは，彝族共通の始祖と信じられているため，ズーズープウとならんで彝族の民族アイデンティティ形成において統一的，安定的な核となる可能性を有しているのである．例えば，四川省，美姑県に伝わる指路経には次のように記されている．

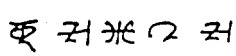
 [go^{33}a^{21}go^{33}] **走阿走,**
行こうよ，行こう，

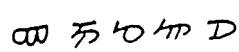
 [ɕi^{33}lu^{33}su^{33}a^{33}ŋi^{33}] **善终的你啊,**
吉死のあなたよ，

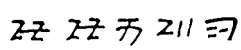
 [bi^{33}mo^{21}ŋi^{55}ga^{33}ma^{55}] **毕摩教你路,**
畢摩があなたに道を教え，

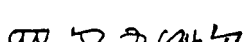
 [dzɿ^{21}dzɿ^{21}tɕɛ^{33}ŋɯ^{33}hi^{55}] **到兹兹解恩.**
ズーズチェエン（ズーズープウのこと）へ行く．

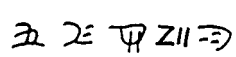
 [du^{33}mu^{33}a^{33}ʐɯ^{33}lɿ^{33}] **笃慕的子孙,**
（アプ）ドゥムゥの子孫においては，

 [ts‘o^{33}ɕi^{33}ȵi^{33}ma^{21}ɕi^{33}] **人死名不逝.**
人が死んでもその名は世に残る．

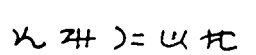
 [p‘u^{21}a^{21}p‘ɿ^{33}ni^{33}ku^{33}] **祖先召唤你,**
祖先が呼んでいるから，

 [ts‘o^{33}ts‘o^{33}mu^{33}a^{33}li^{33}] **即刻就上路.**
直ちに出かけよ．

 [p‘u^{21}p‘ɿ^{33}ŋɯ^{33}ga^{33}ts‘o^{21}] **顺祖迁路线,**
祖先が移住した道筋に沿って，

 [ŋɯ^{33}k‘ɯ^{21}vu^{33}a^{33}li^{33}] **返回祖居地.**
祖界へ帰れるよう（「美姑篇」：656～660，括弧内筆者）．

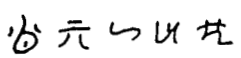
さらに，六祖の言説は，かつて彝族が民族移動の過程で分岐して居住することになったことを伝えている．例えば，彝族に伝わる経典西南彝志を集成して出版した『西南彝志』によれば，六祖（チィープウ）とは，伝説上の洪水の後に生き残った始祖篤慕（アプドゥムウ）の六人の子，武祖慕雅考，乍祖慕雅切，糯祖慕雅熱，恒祖慕雅臥，布祖慕克克，黙祖慕斉斉のことであり，その後，彼らから武，乍，糯，恒，布，黙の六大支系が発展し，中国南西部の広大な地域に分布するに至ったという（畢節地区彝文翻訳組1992：3）．六祖の名はそれ以外にも彝文文献である『勒俄特依』（1986），『賒　榷濮』（六族史詩）（1986），『帝王世紀』（1936）等[9]の中に見られるが，もちろん各地に伝わる指路経にも記されている．例えば，貴州省，大方県に伝わる指路経の中では六祖について，この民族移動の過程を遡る形で次のように記されている．

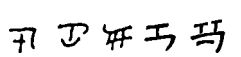
 [bu^{33}ɣa^{33}mu^{33}ɣu^{21}tsɯ^{33}] **布与默相会,**
布は黙に会い，

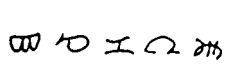
 [vu^{33}ɣa^{33}ndʐa^{55}ɣu^{21}tsɯ^{33}] **武与乍相会,**
武は乍に会い，

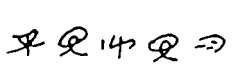
 [ho^{34}ɣa^{33}xɯ^{33}ɣu^{21}tsɯ^{33}] **糯与恒相会，**
糯は恒に会い，

 [lɯ^{55}ɣa^{33}ɖa^{34}ɣu^{21}tsɯ^{33}] **女与男相会，**
女は男に会い，

 [su^{33}tɕo^{34}ts‘ɿ^{33}ɣu^{21}tsɯ^{33}] **六家一处会，**
六の家支が一所に会す．

 [ŋɯ^{33}ha^{55}dzo^{33}mu^{33}sa^{33}] **归回于乐地，**
楽土へ帰り，

 [p‘u^{21}p‘ɿ^{33}p‘a^{55}mo^{21}ɣɯ^{33}] **远宗与远祖，**
遠い一族と遠い祖先，

 [k‘a^{33}ʑɯ^{21}t‘i^{55}ʑɯ^{21}li^{33}] **就此得相会．**
此で相まみえねばならぬ（「大方篇」：668～671）．

指路経は，共通の祖界／祖先の移住の原点ズーズープウやそれぞれの送霊・招魂／祖先移住経路，そしてここで述べた始祖アプドゥムウと六祖に関する言説をすべて含んでいる．こうした意味で，指路経は，彝族における民族アイデンティティ形成において重要な意味を持ちうるものであろう．

また，生者たちへの効果という観点で見た場合，指路経が伝える祖界や送霊・招魂経路のイメージのリアリティも重要である．さらには，少なくとも大凉山彝族の場合，送霊が原則的にすべての家支成員が参加する最大の儀礼であり（1997と1999年に行ったすべての畢摩からの聞き取り調査，及び，樊秀麗2000：159，巴莫曲布嫫2000：206），しかも指路経がこの送霊儀礼の度毎に繰り返し唱えられるということも重要である．

おそらくこうした指路経の表現や儀礼の特徴によるものと思われるが，論者が現地調査を行った大凉山彝族においては，実際，儀礼に参加する生者たちの間に祖界及びそこへと至る道程が非常にリアルなイメージとなって定着していることが明らかになった．たとえば，1997年に美姑県河古洛郷洛覚村で，また，1999年には美姑県甲谷区，美姑県新橋郷温子覚村，美姑県黄果楼で一般の人々に対して聞き取り調査を行ったが，その際，例えば美姑県巴普鎮柳紅郷である女性は次のように語っている．

「死者の霊は家の門から旅立ちますが，途中で熊，いのしし，蛇などのいろいろな動物に出会います．美姑大橋を渡ると，そのあたりに泉があります．みんなここで休憩します．・・・最後には，霊を東方の額木普古[10]というところに送ります．額木普古には祖先たちが住んでいます．・・・そこで祖先たちは畑を耕して蕎麦を作り，鶏，羊，牛などを飼っています．・・・はるか昔，篤慕（アプドゥムウ）の二人の息子古候と曲涅は雲南からやって来て，金沙江を渡り，美姑大橋のところで休憩したのです」．

ただし，ここでは，指路経の持つ民族アイデンティティ形成力について，一定の限定を加えなければならない．というのは，まず第一に，指路経を記した言語と各支系が現在用いている言語との差異からくる制約を考慮しなければならないからである．この点について，嶺福祥は次のように述べている．すなわち，一般に彝文経典は，四川，雲南，貴州，広西の4省の広範な彝族居住地域において伝えられているが，これらの地域の方言がそれぞれ異なるためにそれぞれの地域の方言で記されている．しかし，彝文経典の中の指路経だけは，ほぼ共通の文字，内容，用途・機能を持ち，四省の彝族居住地域に長期にわたり伝えられてきている（嶺福祥1997：55）．もし嶺福祥の指摘が正しいのだとすると，たとえ各支系において指路経が送霊儀礼の不可欠の要素となっているとして

も，－大凉山彝族の場合は別として－言語上の理由から実生活のレベルでは指路経の内容がそのまま儀礼参加者たちに理解されない場合があるということが当然想定されるだろう．

第二に，それぞれの支系に伝わる指路経には，祖界ズーズープウからその支系の現居住地までの経路だけしか記されていない．それ故，実生活レベルを超えた政治的なレベルで，何らかの実践的な意図のもとに多くの支系の人々がそれぞれの指路経を持ち寄り照合し合うような機会がない限り，あるいはまた，学問レベルで集成された『彝文《指路経》訳集』やこれを対象とする諸論文を自ら読むといったことでもない限り，他の支系をも包括するようなさらに大きな民族の範囲を意識することはできないはずである．実生活レベルでは，人々の意識はせいぜい自らが属する支系の全体にまでしか及ばないだろう．

こうした制約を考慮すれば，実生活レベルで指路経が持つ，いわば「一次的」な民族アイデンティティ形成力と，政治的あるいは学問的レベルで指路経が持つ，いわば「二次的」な民族アイデンティティ形成力とを区別する必要があろう．この「二次的」な民族アイデンティティ形成力は，あくまでも複数の支系の指路経の内容の対照によって見積もることのできる最大限の可能性を示すものにすぎない．

例えば，松本光太郎（1995a,b）が明らかにしているように，今日，国家の民族識別工作によって彝族として分類されたグループの下位集団内には，言語の差異や様々の政治的利害等によって，自らを一つの独立した民族として主張しようとする動きが見られる．こうした動向も，指路経が有する「一次的」な民族アイデンティティ形成力の現実的な限界を示唆するものと考えられるのではないだろうか．

最後に付け加えるならば，本稿の成果自体，結果的に実生活レベルを超えた「二次的」な民族アイデンティティ形成力を持つことになるだろう．しかし，本稿の成果は政治的レベルにおける実践的意図に直結するものではなく，あくまでも学問的レベルにおける論理的可能性を示唆するものにすぎないということをここでことわっておきたい．

8．まとめ

指路経は，本来死者の霊を導くものであるが，上述の通り送霊儀礼においては生者の魂も畢摩の導きによって祖先の移住経路を辿る．本稿では触れなかったが彝族のそれぞれの家支に伝わる父子連名系譜が彝族の発展過程を示す歴史的・時間的言説だとすれば，指路経は，彝族の発展を物語る歴史的・時間的かつ空間的な言説となっているのである．こうした意味で，送霊儀礼とそこで唱えられる指路経は，彝族の人々にとって，祖先の移住過程を追体験することで民族移動史をありありと学び，かつ，民族としての空間的広がりを知るための重要な機会となりうる可能性を有しているのである．

少なくとも論者が現地調査を行った大凉山彝族の人々に関しては，送霊儀礼とそこで唱えられる指路経とが，実際に彼らと彼らの共通の祖先とをつなぐ時間的・空間的な絆となり，実生活レベルにおいて民族アイデンティティの形成のために機能していることを確認することができた．彝族の人々にとって指路経が実生活レベルにおいて有する民族アイデンティティ形成能力を明らかにするためには，今後現地調査の範囲をさらに拡大して，方言の異なる他の地域において，葬礼が実際にどのように行われているか，とりわけ指路経の内容がどの程度理解され，どの程度人々の民族アイデンティティの形成に対して機能しているのかを確かめていく必要があるだろう．

他方，本稿では，学問的・論理的レベルにおいて指路経が有するアイデンティティ形成能力との関連において，『彝文《指路経》訳集』に収録された指路経の内の 6 つの指路経をもとに送霊・招魂／祖先の移住経路を地図として完成させた．しかし，この翻訳集に収録された指路経は，現実に各地の彝族の人々に伝わる膨大な量の経典のほんの一部にすぎない．従って，馬学良が指摘するような民族移住地図を，それも高い完成度において描き出すためには，今後も指路経の収集という地道な作業を続けていかねばならないだろう．少なくとも本稿では，こうした方向への一歩を実際に踏み出すことができたと思う．

謝辞：なお最後に，本論をまとめるにあたりご指導頂いた大阪大学大学院人間科学研究科の藤川信夫先生に心からお礼を申し上げます．また，路線図の作成にあたって協力して下さった中国中央民族大学の嶺福祥先生，凉山彝族奴隷社会博物館館長の瓦渣克基氏，彝語の発音表記についてご教示下さった凉山彝族自治州編訳局（語委）の阿余鉄日氏，さらに，現地調査に際し，様々の面でご協力頂いた方々にも深く謝意を表します．

注

［1］ただし雲南省の一部では，漢民族からの影響によって，火葬ではなく土葬が行われている．

［2］これらの儀礼に対する学問的名称は未だ統一されていない．

［3］父系血縁関係に基づき，代々父子連名により系譜を形成してきた血縁組織集団であり，大凉山彝族においてはツヴィと呼ぶ．ツヴィは血縁関係の遠近によって二種類に分けられる．一つは，血縁関係が比較的近く一般的に七世代以内を指すツであり．もう一つは，それ以上の世代を表すヴィである．ツヴィの内部での通婚は本来固く禁じられていた（王昌富1994：65，曲比石美，馬爾子1995：98）．しかし，論者の調査によると，この習慣は近年崩れつつある．

［4］以下では霊と魂の概念を区別して用いている．霊と魂の概念は，彝族の人々の間では，必ずしも明瞭に区別されて用いられてはいない．そのため彼らの宗教観念は非常にわかりにくく，彝族研究者たちの間でも統一的な概念規定は見られない．そこで，すでに拙論「中国の彝族における葬送儀礼の人間形成機能に関する考察」（修士論文，広島大学1998）以降，論者は，彝族の人々における両概念の理解を参考にしつつも必ずしもこれにとらわれずに，両概念を理解可能なものにするため操作的に区別して用いてきた．本文中では，引用箇所及び書名中を除き，両概念はすべて操作概念として用いている．なお，両概念については，拙論「中国彝族の死生観と民族アイデンティティの形成」（2000）を参照．

［5］始祖アプドゥムウから出た六人の子孫で，各地に分岐して居住する多くの家支の直接の祖先と信じられている．

［6］なお，もしこのような研究に際しては，研究の成果が彝族の人々に及ぼす様々の影響について慎重な配慮が必要であることは言うまでもない．

［7］文化大革命後に必ずしもすべての彝族の人々が漢語名から彝語名に戻したわけではないため，著者名のみからその出身を断定するのは困難であるが，少なくとも，ここで挙げた著者たちの内，羅希吾戈，馬黒木呷，果吉・寧哈，嶺福祥，巴莫阿依，朱崇先，巴且日火，阿乍・萬芝，朱文旭，胡金鰲，米正国，伍呷，巴莫曲布嫫の著者は，彝族出身者である．

［8］例外的に雲南省の路南県に伝わる指路経のように，招魂経が指路経から独立している場合もあるが，こうした場合も両経典は儀礼の過程において続けて唱えられる．

［9］これらの各地の彝族に伝わる彝文文献は集成されすでに，馮元蔚（1986），羅希吾戈・楊自栄（1986），丁文江（1936）によって出版されている．

［10］勒格楊日と摩瑟磁火の説明によると，額木普古はズーズープウであるとされる．

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Abstract

The Death Road and the Soul Calling in Zilu-jing, or Sutra of Indicating Route, of the Yi in China:A Study on the Discourse of Ancestral Migration Route with Special Reference to its Relations with Ethnic Identity Making

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The Yi people in China conduct a magnificent funeral for the dead in which the Bi-mo, or the priest, recites Zilu-jing. Through this supra they see off the soul back along the believed ancestral migration route to Zizipow, their place of origin. The teaching of Zilu-jing is essentially to guide the souls of the dead, but at the same time it induces the spirits of the living people attending the funeral too to escort the souls of the dead to their place of origin, where the spirits of the living people part from the souls of the dead and then are brought back to their place of living Through this experience the people of the Yi vividly learn their ethnic migration history by retrieving their ancestors migration route recalled in Zilu-jin.All the versions of Zilu-jing handed down in various places refer to Zizipow, Apudumu the Founder, and the ethnic migration route of the six ancestors.It means that the contents of Zilu-jing constitute a very significant part in making the ethnic identity of the Yi, though they have been dispersed to date and thus formed no durable unified government.

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Impacts of Dairy Cooperative on Rural Income Generation in Bangladesh

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Abstract

The purpose of this paper is to highlight how small dairy farmers in Bangladesh are collectively operating their dairy farming and generating employment for better earnings through a cooperative system. Adopting new technology in agriculture and providing an efficient marketing system is a complex process in developing countries where the majority of farmers are in subsistence level of farming. However, with democratic organization, a cooperative can play a vital role for the poor rural farmers in better access to such technology and fair market price for their products.

1. Introduction

Bangladesh is primarily an agrarian society with 80 per cent of her population living in rural areas. Agriculture is considered the predominant income source for rural inhabitants, contributing 29.8 per cent to GDP and absorbing more than 63.2 per cent of the labor force (Bangladesh Bureau of Statistics, 1997). The rural land distribution is very skewed, with more than 60 per cent of rural people being functionally landless and surviving as day laborers. Some of them depend on various non-farm activities, which cannot ensure a livelihood above a subsistence level. The main problem remains with the unemployed and redundant labor force, termed as "parasitic" portion of the population, unable to make any productive contribution to the economy of the country (Fei & Gustav, 1964). Labor Force Survey in Bangladesh (1995-96) shows that the labor participation rate is only 64 per cent. Thus, crop production alone is not sufficient to provide employment for this large population.

Dairy, fisheries and forestry are other components of agriculture with great unexplored potential. So there is a need to pay more attention to these agriculture activities. In this, dairy farming can be the viable alternative to enhance the economic conditions of the farmers. Bangladesh Bureau of Statistics (1994), has shown that a very high percentage of cattle (50.9%) are owned by small farmers as compared to the medium farmers (37.3%) and large farmers (10.2%). In this context, dairy farming is able

to bring the well being to the vast majority. Dairy farming is a labor-intensive productive work, which can generate employment opportunities for the rural poor, and this is one of the main objectives of rural development. Dairy provides a viable subsidiary occupation for the unemployed rural poor so as to raise their income earning capacities (Kulandaiswamy, 1986). Thus, any systematic step towards dairy development can play a vital role in improving rural economy of the developing countries like Bangladesh. Although the Bangladesh Government extension department was expected to play an important role by providing available facilities and services such as artificial insemination, supplementary feed, medication, and fair pricing system to the poor farmers, no such provision has been done so far. The reason is that Government has livestock development offices in District/*Thana* level (administrative units) and all are established in urban area. It is not easy to access these services for the rural poor. On the other hand, lack of veterinarians, medicine, and other facilities have made the system inefficient. The poor farmers suffer from lack of capital and do not have any financial support. These unorganized farmers are also unable to get the proper price for their products due to the seasonal and regional variations of the market price.

Under these circumstances dairy cooperatives are playing a vital role in income generating activities by resource pooling, cooperating and joint marketing, which ultimately affect the socio-economic condition of the rural poor. So the main objective of this study is to ascertain the role of cooperatives in improving the socio-economic conditions of dairy farmers.

For this, the socio economic aspects of cooperative dairy farmer will be analyzed in this paper. This will be done in regards to the size of milk cow holding and its relation with landholding including landless and the nature of dairy farming in using their limited resources and family labor. It will also analyze the contribution of cooperative dairy farming in income generation and consumption at the household level through comparative analysis of cooperative and non-cooperative farmers.

2. Dairy Farming and Cooperative in Bangladesh

2.1 Present Status of Dairy in Bangladesh

Although dairy is an important source of income for the rural poor, unfortunately the condition of dairy in Bangladesh is not healthy. According to the livestock and poultry survey in 1988-89, there are 20.36 million cows in Bangladesh. These are mainly *Bos Indicus* (*Zebu*), which are generally small in size and slow, in growth. They are low in weight and produce comparatively less milk. The reasons behind these are said to be;

i) indigenous species.
ii) usually fed with residues of crops instead of green grasses, concentrates and supplementary feed, and
iii) lack of proper medication

The indigenous cows however, have some favorable characteristics such as low maintenance cost, strong resistance to the local diseases and are adaptive to the local environment. But these low productive cows are not suitable for commercial milk production.

The density of cattle population is comparatively higher in Bangladesh compared to other neighboring countries. However, there is a problem of low productivity of the cattle in terms of milk and meat production. The best policy could upgrade the cattle species by artificial insemination and supply of the necessary inputs to the rural areas where most of the cows are found. Most of the rural households keep cattle in order to produce milk for family consumption and to cultivate their land. The population of

rural areas is mostly poor and landless, and the raising of cows is done in a very traditional way without any special care. Although there is a general trend to maintain cows in Bangladesh, the rural people have not yet undertaken dairy on a commercial scale. Recently people in rural areas are trying to diversify their income sources to ensure their livelihood. In this process dairy is looked upon as a viable alternative. Keeping these immediate goals social organizations like cooperatives are playing an important role in the development of the dairy sector. Poor farmers are carrying out their dairy farming on a cooperative basis and are producing a large amount of milk. They have set up their own milk processing centers, own veterinary services and milk marketing channels and established their own transportation system with the assistance of the Government. The Government loan was given to the Central Cooperative Union for establishing the dairy infrastructure, such as transportation system, processing centers, and factory. The Government's aim was to ensure the good returns for the rural dairy farmers.

2.2 Cooperative in Bangladesh

Cooperation and competition are two basic social processes and fundamental theme of sociological literature. However, for an agrarian developing country cooperation can act as an effective and efficient instrument to bring positive socio-economic changes for the masses. Cooperation in its modern perspective started in British India (Bangladesh was a part) with the enactment of the Cooperative Societies Act. of 1904. The main aim was to provide cheap credit to the farmers. Thus cooperative in Bangladesh is not a new concept. After independence in 1971, the cooperatives gained popularity to some extent. But it could not significantly fulfil their basic aims such as agriculture development and the income generation for the rural poor people (Ahmed, 1989).

2.3 Recent Development of Dairy Cooperative in Bangladesh

The basic mechanism of the cooperative could be the capital formation by productive work, and the development of infrastructure such as agriculture crop storage, transportation, and the stability of the market. To do so, it needs to provide loans to the cooperative, rather than the individual cooperative members. Bangladesh Milk Producers' Cooperative Union Ltd. (BMPCUL), a newly emerging unique type of cooperative, is not providing any significant amount of credits to the individual dairy farmers, but is functioning as an agent of income generation for the dairy farmers. The Government took initiatives to organize poor dairy farmers under a cooperative umbrella (BMPCUL), in which the Government gave credit to establish the dairy infrastructures such as, milk processing centers, factory and veterinary services, transportation and a stable market. BMPCUL started its function with the aims of establishing a dairy base in Bangladesh as well as rural development by providing inputs to the farmers at low cost and ensuring fair price to the small rural milk producers. Presently the BMPCUL has been running seven dairy plants for processing and/or pasteurizing at Dhaka, Baghabarighat, Tangail, Manikganj, Tekerhat, Sreenagar and Rangpur region.

In 1946 a dairy plant with a processing capacity of 2,000 liters of milk per day was established by National Nutrients Company at Lahirimohanpur, Pabna district (presently Serajganj district) with the target to send milk products through railroad to Calcutta (India) market, (Haque, 1998). However, this could not be materialized due to the partition of India and Pakistan. Thereafter, in 1952, Eastern Milk Producers Limited, a private company, purchased this dairy plant from the original owner. Within a couple of years the plant started its production activities and marketed butter, *ghee* (one type of butter), cheese and powder milk under the trade name of Milk Vita. Even with all-round efforts by the owner of

the company, regarded as pioneer of dairying in the country the plant could not attain the level of proven success. As a result, in 1965, its ownership was transferred to newly formed first Milk Producers Cooperative Union, under the name of Eastern Milk Producers Cooperative Union Limited (EMPCUL). Around the plant at Lahirimohanpur about 100 village milk producers' cooperative societies were formed for the collection of milk needed by the plant (Hanif, 1996 and Haque, 1998).

In 1973, soon after the liberation, the Government of the People' Republic Of Bangladesh undertook a development scheme titled Cooperative Dairy Complex based on the recommendations from United Nations Development Program, Danish Agency for Development Assistance (DANIDA) and Food and Agriculture Organization of the United Nations. The scheme had the proposal of establishing dairy plants in some milk surplus area of the country, ie. Tangail, Manikganj, Tekerhat, Baghabarighat with a city plant at Dhaka. Taking over the overall responsibilities, viz; debts, assets and liabilities of the previous dairy plant, the EMPCUL changed its name Milk Producers Cooperative Union Ltd. in 1977. However, the brand name of the products remained same. Under a bilateral loan agreement with DANIDA, the Government awarded a contract to Danish Turkey Dairy of Denmark (DTD) to plan designs and established 5 dairy plants. DTD supplied the machinery and all the 5 dairy plants were established within the project period (1973-1978). The total cost of the project amounted to TK.155.61 million. The plants, though donated by DANIDA to the government, were given to the milk union as a loan. Around this plant area, there were about 335 primary milk producers' cooperatives with membership of over 28 thousand small and landless farmers. They supplied milk at a daily average of 6 million liters, by which the Milk Union produces butter, cheese, ice cream, milk powder, pasteurized milk, etc., and marketed these products under the brand name of Milk Vita. The union conducted cattle development program comprising supply of improved semen, mobile veterinary services, feed and fodder. The Primary Milk Producers Cooperative, which was self-reliant with little or no financial support under the project, earned TK. 650 (U.S. $ 1 = TK.54, in the year of 2001) million in 1997-98 and distributed patronage refund to members. The Milk Union, through its primary milk producer's cooperatives, had thus created additional earning opportunity for the poor and contributed to national health and nutrition by providing fresh milk and milk products to the urban dwellers (Haque, 1998 and Hanif, 1996).

2.4 Milk Vita, Management Affairs

Bangladesh Milk Producers Cooperative Union Ltd. (BMPCUL) so long have operated under a civil service administration system, governed by cooperative principles, rules and by-laws, rather than on commercial concepts and practices. Its Chief Executive had always deputed from senior administrative cadre of the government. But some major changes in the overall policy of BMPCUL have appeared in recent years. The major administrative reform was made in 1991, by employing a professional Chief Executive in place of Government deputation and adopting appropriate policies and measures to produce more milk (Haque, 1998). A managing committee consisting of nine members runs BMPCUL. It is an honorary position and comprises of six members elected from the village primary milk producers' cooperatives and with three nominated members from the Government. The presidents of all primary milk producers' cooperatives at the village level directly elect the chairman.

A Village Milk Producer Cooperative consists of one to three villages covering an area of approximately 1-2 sq. miles, having a marketing surplus of 180-200 litres of milk per day. To establish a cooperative first the group of dairy farmers needs to inform the BMPCUL regional authority of their intentions. Generally, the authority considers the first year as the observation period. At that time the

authority verifies the milk production capacity of this group. If the group can fulfill their required amount of milk production then it will be formally registered as a cooperative under the BMPCUL system. The **Fig-1** shows individual producer farmers are making village level cooperatives. A number of cooperatives together constitute a milk shed area. All milk shed areas are under the BMPCUL.

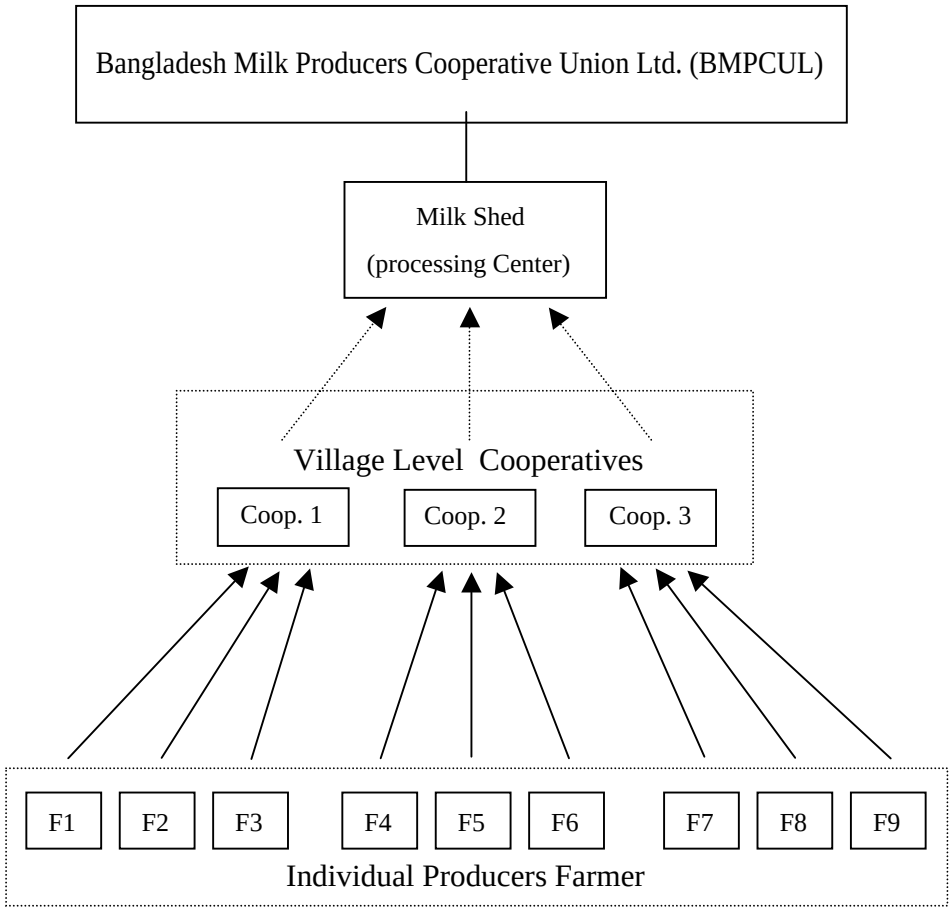

Fig-1. Bangladesh Milk Producers Cooperative Union Limited (BMPCUL)

Before the cooperative was formed, farmers had to depend on middlemen to market their milk and as a result they were exploited in various ways. Not only were they paid low price but also cheated in weighing. To improve the situations, the BMPCUL has been helping the rural milk producers in organizing their own village Primary Milk Producers Cooperative so that they can help themselves and become responsible for marketing their own milk. They no longer have to depend upon middlemen and a relatively unstable market.

3. Field Study

In order to understand these changes and the consequences a detailed field study was conducted. The main objective of the study is to ascertain the role of cooperatives in improving the socio-economic conditions of dairy farmers. Out of seven milk-shed areas, Baghabarighat milk-shed area, in Shirajganj district, Northwest from Dhaka, where the first dairy cooperative was established which formed the base of the dairy cooperative in Bangladesh, was chosen for this study. This milk-shed consists of 163 primary village cooperatives. The data and the information for the analysis was collected in two different methods: General survey for the cooperative members and case study for both cooperative members and non-cooperative villagers in the same village.

The milk-shed area is divided into nine Thanas (administrative units). Out of them, one Shahjadpur Thana was selected for study as it was regarded to represent the whole milk shed area. In this Thana, some cooperatives are with grazing land facilities and some are not. Some cooperatives have good transportation facilities and others do not, boat being the only means of transportation. The other 8 Thanas do not posses all these conditions, do not have these facilities and hence not represent the whole milk-shed area.

Further, out of 35 cooperatives in Shahjadpur Thana, 3 cooperatives, named Potajia, Ratankandi, and Chara Chethoria were selected. Special consideration (such as production of milk, grazing land, means of communication) was given to the selection process so that these cooperatives can be representative for this Thana. Considering the milk production, each of these three cooperatives were taken from three different milk producing groups on the basis of high, medium and low milk production. The means of transportation was considered, as well. One cooperative could be reached only by boat, another one by *riksa* (3 wheeled bicycle) and the third one by boat and *riksa*. Another criterion considered was grazing land. One cooperative having grazing land was selected. Another with partial grazing land and the third one without grazing land was selected. From each of the sampled cooperative villages, 40% of member households were randomly sampled. The sample together comprised 152 from three different cooperatives. Personal interviews were conducted through the use of a structured questionnaire; general survey.

The case study method was applied to know the detailed household income composition. The questionnaire for this purpose was designed as such that data for comparing income and the consumption among the cooperative members and non-members general villagers could be done. For the case study, one cooperative village mentioned above (Potajia) was taken. All together, 80 households (40 households from cooperative and another 40 households from non-cooperative) were purposively taken so that it equally includes all type of farmers; i.e. landless, small and medium and large farmers.

It has to be reminded here that all information used in this analysis is collected personally, participatory way through interviews, observation and investigations. Precaution has been taken to maintain objectivity and to keep the study free from various biases. For this purpose, the author visited all the households and interviewed the people in the absence of Milk Vita's officials so that the farmers can directly express their views. However, in spite of these, some limitations could not be avoided. Unavailability of printed information has led to give greater importance on verbal interviews of the farmers who are not only illiterate but also have never had such experiences of giving interviews, talking logically for fairly long time. The information thus collected was often diagnosis and it was difficult to rationalize farmers' activities on the basis of this information alone. However these limitations were checked cautiously with review work, cross checks, participatory observation and re-interviews.

Secondary information was collected from the official records; printed reports, brochures, and pamphlets, as per need for the analysis.

4. Implication of Dairy Farming for Dairy Cooperative Members

4.1 Socio-economic Characteristics of the Dairy Farmers

Sirajganj is an agriculture-based district like many other districts in Bangladesh. Literacy rate of the people is very low (27%, BBS 1995). Major rivers surround the district, making it a water-logged district, which is under the water for more than four months. In rainy season, the sampled area is either fully flooded or some of its part is visible where people can find some dry places as if those "dry places" are some kind of islands in the sea. This sort of geographic as well as environmental conditions make their cropping cycle limited to two crops, mostly rice and winter crops such as oil seeds and pulses. This is the very reason, which makes their life rather difficult as it lessens the employment opportunities in non-farming sector as well. As a result, the poor people look for other alternative ways to support their livelihood. In this context dairy farming becomes one of their important options.

4.2 Land and Cow Holding

In the rural area of Bangladesh, land is the symbol of power, social dignity and economic status in the society. The people with land have better access to agriculture inputs, credit and better income sources. Table -1 shows that distribution of land and milk cow holdings in study area. It reveals that 22% of the dairy cooperative households are functionally landless with landholding up to 0.49 acre. Major portions of the cooperative households (45%) are small farmers with landholding of 0.50-2.49 acres. The middle farmers with landholding of 2.50-7.49 acres constitute 22 percent. Only a small percentage (11) is large farmers with landholding more than 7.50 acres. It means that the rural land distribution is very skewed. The poor farmer consequently has to meet their subsistence needs by seeking employment opportunity elsewhere.

Table-1: Land and milk-cow holding according to farm categories for dairy cooperative members

Farm category	Household number	Total land holding(In acre)	Total milk cow holding(number)
Landless	34(22.37)	4.01(0.69)	61(11.64)
Small	68 (44.74)	99.42(17.05)	213(40.65)
Medium	33 (21.71)	141.8 0(24.31)	130 (24.81)
Large	17 (11.18)	338.00(57.95)	120 (22.90)
Total	152 (100.00)	583.23 (100.00)	524 (100.00)

Source: Field survey, 1998, 2000

Note: (1) Landless is with 0.0 - 0.49 acres of land, small farm is with 0.50 - 2.49, medium farm is with 2.50 - 7.49 and large farm with 7.50 and above acres of land.

(2) Figures indicate ( ) denotes percentage.

The same table reveals that the landless, the bottom 22% farmers, have only a very negligible amount of land (0.69%), however, they own 12% of the total milk cow. The small farmers hold only 17% of total land, but they own 41% of milk cow. The medium farmers own 24% of land and also possess nearly same percentage (25%) of milk cow. But large farmer the top 11 percent having more than half of the land (58%) possess only 23% of milk cow. Thus the possession of milk-cows has less accumula-

tive nature than possession of land, indicating that dairy farming can be more remunerative for the rural poor and that development of dairy will better ensure the equity among different categories of farmers.

4.3 Labor Utilization

In order to raise a cow one needs to look after it everyday. Thus various kinds of work, i.e. feeding and grazing the cows, watering and cleaning, maintaing cow shed, checking the health of cow, milking the cow, selling and processing of milk and so on. Thus cow raising generates work through out the year. A cow generates 130 mandays of employment opportunity per year among landless farm (**Table-2**). For the small, medium and large farmer it is generating 125, 108 and 80 mandays, respectively. According to the cattle holding size, landless farmers are using 243 mandays labor, small farmers are using 389 mandays labor, and medium and large farmers are investing 423 and 573 mandays labor, respectively. Thus the labor utilization per cow decreases gradually with the increase in cow holding.

Table-2: Labor utilization in dairy farming according to farm categories

Farm Category	Average cow holding	Total manday labor	Manday labor per cow	Family labor (%)				Employed labor (%)
				Total	Male	Female	Child	Total
Landless	1.8	243.6	130.4	95	38	51	6	5
Small	3.1	389.4	125.6	92	46	43	3	8
Medium	3.9	423.5	108.6	95	59	34	2	5
Large	7.1	573.5	80.8	42	36	6	0	58

Source: Field survey, 1998, 2000.

Note: (1) Mandy: One manday=8 hours work of an adult per day.

(2) The labor use of male, female, and child is calculated only for family labor, i.e., employed labor is excluded

(3) Farm category is defined in Table -1

Data reveal from the same table that landless, small and medium farms are mostly using family labor, each above 90%. Where as large farm is using more of the employed labor. Their family labor used in dairy farming is only 42% of the total labor needed. Same data also reveal the nature of labor utilization among different farm categories. Landless farm uses 51% of the female labor, small and medium farms are using 43% and 34% respectively. But the large farms almost do not use female labor. The case of child labor (9-12 years old) use was very insignificant in all farms and is reducing gradually according to farm size. The rate of family labor use is higher for the landless and small farmers than the larger ones.

Thus, it can be said that the work generated by cow holding is absorbed by family labor, including females in landless, small and medium farm categories which otherwise would remains unutilized. Thus, cow holding contributes in both, use of family labor and lessening disguised unemployment and underemployment.

4.4 Gross Income

Most of the farmers from rural areas try to diversify their sources of income for their livelihood. A landless and small farmers have a small amount of land so their earnings are mostly from dairy, and other income earned from small business, daily wage and sometimes low paid services. On the other hand large farmers have a stable income from their land. **Table-3** shows the percentage of gross income from dairy and other sources. Data reveal that landless and small farms are earning a substantial share more than 40% of their income through dairy farming. Farmers in medium and large categories earn

38% and 22% of total in come, respectively, from their dairy farming.

Table-3: Share of gross income from dairy and other sources

Farm Category	Income from Dairy (%)	Income from other sources(%)
Landless	43	57
Small	44	56
Medium	38	62
Large	22	78

Source: Field survey, 1998, 2000.

Note: (1) Other sources include, crop production, non-farm job, day laboring and all other economic activities.
(2) Farm category is same as Table-1

5. Comparative Analysis of Dairy Cooperative Members and Non- members

5.1 Occupation structure

The main occupation of the family is considered as the one from which most of the family income is earned. **Table-4** shows the occupation structure and the availability of employment opportunity among dairy cooperative and non-cooperative farmers. Data reveal that 57% and 22% percent of the non-cooperative households take crop production as the primary and the secondary source of income, respectively. For the cooperative households only 30% and 35% of the farmers take it as their primary and the secondary source of income, respectively. Among cooperative households, 33% and 43% take dairy as their primary and secondary source of income, respectively. However, the non-cooperative farmers are not engaged in dairy farming. Comparatively a large number of non-cooperative households (each 20%) are engaged in day laboring both as primary and secondary income sources. Where as they are very few among cooperative households. In case of salaried work, business and other jobs, there was no significant difference between non-cooperative and cooperative members. But it is found that relatively large percentage of households from cooperative have secondary (95%) and tertiary (38%) sources of income. The same figures for the non-cooperative households are comparatively small, 70% for secondary and 23% for tertiary sources of income. This difference is primarily due to difference in having dairy as a secondary or tertiary job among the cooperative households.

Table-4: Occupation structure among cooperative and non-cooperative farming households

Occupation	Cooperative households (%)			Non-cooperative households (%)		
	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
Crop production	30.0	35.0	12.5	57.5	22.5	2.5
Dairy	32.5	42.5	22.5	0.0	0.0	0.0
Day laboring	7.5	2.5	0.0	20.0	20.0	5.0
Salaried work	12.5	2.5	0.0	10.0	5.0	2.5
Business	10.0	7.5	2.5	7.5	7.5	10.0
Other jobs	7.5	5	0.0	5.0	15.0	2.5
Total	100.0	95.0	37.5	100	70.0	22.5

Source: Field survey, 1998, 2000.

5.2 Household Income:

Table-5 shows the cooperative dairy household monthly income compared with the monthly income level of non-cooperative farmers as well as national rural income. Data reveal that among non-cooperative households, a large share, (31%) falls into the income group of Tk. 1249, whereas, only a little, (4%) of the cooperative households falls into this income group. For national level, the figure is 14%. This indicates that the income status of large number of non-cooperative households; general farmers is lower than that of national level. About the same proportion of households both form non-cooperative (29%) and cooperative (30%) households fall into the income category of 1250 - 2999. Where as in national level 47 % falls into this income group. For the income level, 3000 - 6999, relatively large parentage of households (45%) from cooperative, but only lesser percentages from non-cooperative (32%) and national level (33%). Comparatively, a less proportion of households (4%) from non-cooperative as well as national level fall in the higher income group of 7000 - 12499. However, 13% of the cooperative households fall into this income category. Similar trend can be seen in the highest income group (12500 and above). The data show that the cooperative member households tend to have higher level of income than non-cooperative household and much higher than the national figures.

Table-5: Monthly household income at national level and, cooperative and non-cooperative households in the study area

Income group	Percentage of households National (Rural)	Percentage of households in non-cooperative	Percentage of households in cooperative
＞1249	14.5	31.0	4.0
1250 - 2999	47.2	28.7	29.6
3000 - 6999	32.6	31.6	45.4
7000 - 12499	4.6	4.4	13.1
12500 +	1.1	4.3	7.9
Total percentage	100.0	100.0	100.0

Source: BBS-1995 & Field survey, 1998, 2000.

5.3 Household consumption

The farmers engaged in dairy farming are consuming more foodstuffs than non-cooperative farmers. **Table-6** shows the average per capita food intake (per day) by cooperative households compared with non-cooperative households.

Table-6: Per capita average daily food intake among cooperative and non-cooperative households

Items	Cooperative households	Non-coop. Households
Rice (gm.)	810	790
Meat (gm.)	26	10
Milk (ml.)	210	40
Fish (gm.)	120	100
Dal/beans (gm.)	30	45
Eggs (numbers)	0.19	0.1

Source: Field survey, 1998, 2000.

Data reveal that the daily rice intakes for cooperative households are 810 grams not much different from 790 grams, for the non-cooperative households. But per capita daily milk consumption is 210 ml.,

very high, for the cooperative households compared to 40 ml. for the non-cooperative households. The consumption of meat in cooperative households is also higher (26grams) than non-cooperative households. This trend is also observed for fish and eggs consumption. However, per capita dal (beans) consumption is less (30 gm) for cooperative households than the non-cooperative households (45gm). Beans are being used in household consumption as the substitute for meat, eggs and fish, especially among the lower income group not being able to afford meat and fish as a source of protein.

6. Future Prospects of Dairy Cooperative

Table-7 shows the development of cooperative activities in the Baghabarighat milk shed area. Data reveal that the number of cooperatives and of the members have increased substantially within the period of 1991/92 to 1997/98. In 1991/92, there were only 99 cooperatives with 8,311 members, but in 1997/98, the total number of cooperatives and their members have increased gradually and reached 163 and 13825, respectively.

Table-7: Development of dairy cooperative activities in Baghabarighat milk shed area 1991/92-1997/98.

Items	Year						
	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
No. of primary cooperative	99	105	134	142	152	161	163
No. of Members	8,311	8,810	10,801	11,953	13,478	13,778	13,825
Milk collection (in litre)	4,868,614	7,700,263	9,627,029	12,946,697	14,862,364	15,116,976	*
No. milking cows	9,015	12,222	15,280	17,981	18,000	20,000	25,000

Source: From Bagabarighat cooperative office, general section.
Note: '*' denotes, data is not available.

The total milk production in 1991/92 was less than five million litres, the production gradually increased and it became fifteen million litres in the year 1996/97. Not only the milk production, but also the number of milking cows has increased about three- fold within the past 7 years. Same trend is observed for the number of cooperative as well as their members.

Table-8 shows the development of cooperative activities in case study area. Data reveal that the cooperative members gradually increased every year. In 1991/92, there were 104 cooperative members and in 1998/99, it increased three folds to 307. The same trend is observed for milk production and the

Table-8: Development of cooperative dairy activities in Potajia 1991/92-1998/99

Items	Years							
	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
No. Of Members	104	127	147	162	197	216	268	307
Milk collection (in litre)	175,674	234,062	322,411	491,500	512,241	520,872	669,408	815,631
Income from milk selling (in Tk.)	2,024,843	2,758,738	3,784,891	6,299,480	6,934,409	7,600,102	9,504,071	11,504,047
No. Milk cows	511	564	598	627	737	806	865	904
No. Of cows	961	1,033	1,172	1,262	1,347	1,449	1,559	1,647
No. Of calves (by insemination)	53	115	66	77	254	218	262	230

Source: From Potajia, cooperative office, general section

income generation. In 1991/92, the total milk production was 175,674 litres and the income from it was Tk. 2,024,843. But, milk production and the income increased substantially by 1998/99, and became 815,631 liters and Tk. 11,504,047, respectively. The similar trend is observed for the number of milk cows, number of cows and numbers of calves by artificial insemination.

Table-9 shows the trend of recent changes in milk production in sampled cooperative households. Data reveal that 89% of total households feel that their dairy farming is getting better both qualitatively and quantitatively compared to the situation 5-10 years ago. On the other hand, only 8% of the farmers said that their milk production is decreasing and only very few (3%) farmers think that it has not changed.

Table-9: Recent changes in milk production felt by cooperative dairy farmers

Farmers category	Increase in production	Decrease production	Constant production	Total
Landless farm	17.11	3.95	1.32	22.38
Small Farm	41.45	3.29	0	44.74
Medium Farm	20.39	0.66	0.66	21.71
Large Farm	10.53	0	0.66	11.19
Total	89.48	7.9	2.64	100

Source: Field survey, 1998, 2000

Table-10 Shows that 57 % of the cooperative farmers think price hike of dairy feed is main obstacle for daily farming activities. Another 36% of the dairy farmer face lack of credit to run their dairy farming. Regarding the cooperative semen, 7% of the farmer thinks the supplied semen is of low quality. Very few, only 3%, of farmers wish the fat testing equipment in their milk-collecting center.

Table-10: Farmers view regarding their problem in dairy farming

Farmers View	Number of farmers	Percentage of farmer
Price hikes of dairy feed	77	50.66
Lack of credit	55	36.18
Low quality semen	10	6.58
Lack of fat testing equipment	5	3.29
No response	5	3.29
Total	152	100

Source: Field survey, 1998, 2000

Table- 11 shows that the per capita milk availability is very less in Bangladesh and it is reducing because of population growth and the lack of effective dairy development program. Data reveal that in 1980/81 the per capita (daily) milk availability was only 0.041 litre. It also shows that the per capita milk availability is reducing every year and it reached 0.025 liter by the years of 1993/94. However, the recommended minimum per capita milk consumption should be 250 ml (Alam, 1995). Thus,Bngladesh needs to produce much more milk to meet this gap. Hence, it can be said that the Bangladesh has great potential to develop its dairy sector to meet the national demand. In the process of dairy development, cooperative can contribute significantly by providing supports such as artificial insemination, medication, transportation, better fixed market price for their milk and basic knowledge of dairy farming that lead them to improve their milk consumption level and household economy.

Table-11: Per capita milk availability in Bangladesh from 1980-81 to 1993-94

Years	Per capita milk, yearly (in litre)	Per capita milk daily (in ml.)
1980-81	14.97	41.1
1981-82	14.32	39.2
1982-83	15.41	42.2
1983-84	9.95	27.3
1984-85	10.93	29.9
1985-86	10.71	29.3
1986-87	11.4	31.2
1987-88	10.38	28.4
1988-89	11.04	30.2
1989-90	11.15	30.5
1990-91	10.06	27.6
1991-92	9.4	25.7
1992-93	9.07	24.8
1993-94	9.29	25.4

Source: BBS, 1997
Note: Imported milk is excluded

As shown **Table-9**, the cooperative farmers are very positive about dairy farming and are rather satisfied with daily activities. Very few complain about the cooperative services and they are eager to put more capital in it. Thus there is a great potential for development of dairy farming in Bangladesh. It is noted that, so far milk cooperative covers only few regions in Bangladesh. So it has further scope to expand these activities and cover wide area of the country. The BMPCUL runs their business and sell their products, covering only about 12 districts out of the total 64 district in Bangladesh. With the expansion of cooperatives in numbers and their activities milk production can be encouraged and they can expand their business through out country.

7. Summaries and Conclusion

The findings of this study suggest that agriculture (crop production) is no longer the predominant occupation among the study dairy cooperative members. In fact, dairy has emerged as a parallel occupation. Another trend observed in the study area is the diversification of income sources. The rural households have secondary and tertiary occupations. Thus, this trend of dairy development in farming through cooperative initiatives can play a very significant role in rural development.

Land distribution is very uneven and most of the farmers are functionally landless and a very small percentage of the large farmers possess big portion of the land. This indicates that in order to create gainful activities for the landless and small farmers other farming activities that can combat the emerging problems of the rural society are necessary. Comparison of cows and land holding suggests that cows have no accumulating nature to be concentrated in the hands of very few people. This indicates that dairy farming can be a more contributive activity for the poor rural dwellers.

It is observed that dairy farming is generating about 45% of the total income among the land-poor peasants. Regarding the utilization of labor in dairy farming, almost all farmers are using their unemployed and under employed family labor very efficiently. Half of the labor utilized by landless farmers is female. The percentage of female labor decreases as the size of the farm increases. This shows that

dairy farming efficiently utilizes the otherwise unproductive female labor force, as well.

In respect to the household economy, the income of cooperative households has increased substantially than that of the non-cooperative households, also higher than the national figures. This improvement in income is made possible because most of the dairy farmers joining the cooperatives are generating a substantial income from the dairy farming. The benefits from cooperatives increase the incomes of those living in rural areas. It is found that almost all cooperative members are consuming more milk, meat, fish, and eggs than non-cooperative farmers.

It is also observed that the cooperative activities gradually increased in the study milk-shed area. Not only the number of cooperatives but also the cooperative members and the total number of milk cows have increased. The milk collection of this region has increased dramatically during the last decade. Similarly, case study cooperative has changed and cooperative members, milk production, cow holding and finally the income of the cooperative farmers have increased substantially. Increase in income means further investments can be made in rural areas and the linkage effects will eventually benefit the rural society as a whole.

Poverty is mostly confined to those who are at the lowest ranks of the society. It is this section of the society that has benefited the most from the dairy cooperatives. The regular income earned from the sale of milk has enlarged their perception on savings and investment and also enhanced their levels of aspiration. Dairy cooperatives in Bangladesh are providing a viable means of income generation. It has been continually providing cash income to those living in rural areas.

The per capita milk availability in Bangladesh is very low and reducing gradually mainly due to population growth. But, it was observed that, almost all the dairy farmers perceive that their milk production has been increasing compared to 5-10 years ago. It suggested the potential for the future expansion of dairy activities and meet the national demand.

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An Analysis of Pesticide Use for Rice Pest Management in Bangladesh

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Abstract

The so-called Green Revolution package was introduced into Bangladesh agriculture system in mid 1960s. It promised to increase production of cereal crops, particularly rice by the introduction of HYV seeds, application of chemical fertilizer and pesticide, and irrigation. HYVs rice has contributed significantly to the progress towards the food self sufficiency in Bangladesh on the contrary increased to the environmental degradation due to the intensive use of agrochemical and other modern technology. The use of pesticide has been increased 400% per acre and its cost increased 600% during the last couple of decades. Between 1985 and 1990 the sales of pesticide became double. At present, 84 pesticides active ingredients belonging to 242 trade names have been registered in Bangladesh. Out of the total pesticide use, over 80% are used in rice fields. The rapid increase of pesticide use is causing detrimental effect on environment and health of farm workers and consumers. Pesticides are contaminating ground and surface water, which is causing depletion of inland fishing resources and ecosystem. Therefore, the present study evaluates the level of farmers' pesticide use practiced to rice pest control, their knowledge and perception of the impact of pesticides on environment. A questionnaire survey has been conducted to collect the data from the farmers. Data have been collected from 86 rice farmers of Bangladesh. The study revealed that the respondent farmers used mostly insecticides at the rate of 1 to 10 kg active ingredients per hectare of cropland and the time of application varied from 1 to 4 sprays per crops. The richer farmers used pesticide more frequently as compared to small and medium farmers. But most of the pesticides belong to extremely and highly hazardous category as classified by WHO. Considering the cropping intensity and toxicity of the pesticide, the environment and farmers health are at high risk under the pesticides contamination. The average level of knowledge and perception of the respondents was found poor to moderate. In general the respondents showed favorable attitude towards the pesticide use. Among the insecticides used by the farmers, Bashudin 10 G, Diazinon 60 EC, Sumithion 60 EC and Padan 50 SP have already been banned for use on rice in other developing countries. The use and availability of Bashudin, an obsolete pesticides indicates that existing pesticide laws and regulations are not strictly enforced in relation to import, formulation, repackaging, distribution, advertising and use of pesticides. Therefore, in Bangladesh the laws and regulations of pesticide should be enforced more strictly

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and a new policy should be enacted to educate the farmers regarding the harmful impacts of pesticides. There is an urgent need to assess the impact of pesticides on human health and pollution level of pesticides in soil, water, and air in Bangladesh.

Key words: Environment, impact, pesticide, perception, rice farmers.

1. Introduction

Pesticide use in crop production has been suspected of being a major contribution to environmental pollution. There are widespread and growing concerns of pesticide over-use, relating to a number of dimensions such as contamination of ground water, surface water, soils and food, and the consequent impacts on wildlife and human health (McLaughlin and Mineau, 1996). Farmers often spray hazardous insecticides like organophosphates and organochlorine up to five to six times in one cropping season while only two applications may be sufficient. The usual practice of draining paddy water into irrigation canals may cause river and lake contamination. Residues carried by the water can be taken up by non-target flora and fauna, leach in to soil, and possibly contaminate groundwater or potable water. A greater problem lies in the bioaccumulation of pesticides in beneficial organisms like fish. Residues in food pose to consumers if the maximum residue limit set by Food and Agriculture Organization (FAO) and World Health Organization (WHO) is exceeded (Pingali and Roger, 1995).

To reduce crop losses due to pest attack, farmers in parts of Asia are spraying as much as 800 times the original recommended dosage of pesticides (Farah, 1994). The use and abuse of pesticides has disturbed the ecological balance between pests and their predators in developed and developing countries (Dahal, 1995). The lesser-developed countries still don't use as much pesticide as does the industrialized world. A study of Food and Agriculture Organization apprehended that in 21st century the pesticides use would increase in the developing countries (FAO, 1995).

Pest control becomes a social need in countries where the food supply is short and there is an urgent necessity to increase rice production. Before the green revolution pesticide use was largely confined to the industrialized nations. Today, pesticides are produced and used globally. The third world's use of pesticides increased greatly during the Green Revolution in the 1960`s and beyond, and it is related to the changed growing conditions which was brought about by the use of green revolution varieties and technologies. Monocultures coupled with increases in irrigation and fertilization often improve conditions for pests, necessitating more control efforts (Yudelman et al. 1998).

Insecticide choice in the developing world is often older, broad-spectrum compounds belonging to the organophosphate and carbamate classes chemical families noted for their acute toxicity. These products are popular partly because they are no longer under patent protection thus are considerably cheaper than the newer, still-proprietary pesticides increasingly used in more developed countries. Organochlorine insecticides such as DDT, lindane, and toxaphene are still widely used in the developing world, although their danger to humans and animals is well known. In fact, about 1/2 of the pesticides used in the lesser-developed countries are persistent Organo chlorine, such as DDT. They are used because they are cheaper and are considered safer for farmers to apply because of their relatively low short-term toxicity to mammals (including farmers).

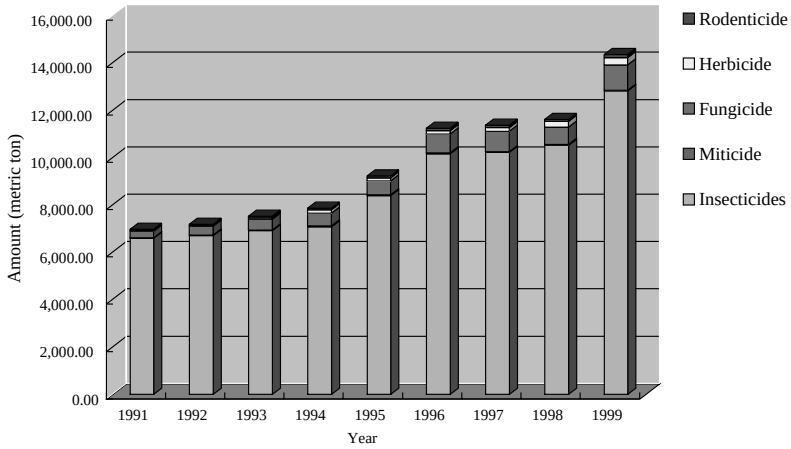

Figure 1. Trend in Pesticides consumption in Bangladesh

Pesticides Use in Bangladesh

Pesticide as agricultural input was introduced in Bangladesh in 1957 and mainly DDT and BHC was distributed by the Government to the farmers free of cost until 1973. The pesticides become very popular to the farmers for two reasons; firstly quick and visible effect on pest and secondly, no cost involvement. In 1974, the subsidy was reduced to 50% and in 1979 it was withdrawn completely (Islam, 2000). As a result at first pesticide use declined and again gradually increased and in 1999 the amount reached 15000 metric tons (**Figure 1**). At present 84 pesticides with 242 trade names have been registered in Bangladesh (PAB, 2000).

The use of pesticides in Bangladesh is less in comparison to other developing countries. It is 0.03 kg/ha compared to 0.3 kg/ha in India, 0.4 kg/ha in Sri Lanka and 0.8 kg/ha in Indonesia (Karim, 1998). Currently, 14,340.40 metric tons of commercial pesticides are used annually, primarily in the cultivation of rice, tea, jute, sugarcane and vegetables. About 70% of pesticides are used on rice. Pesticides used on rice consist almost exclusively of insecticides, but fungicides are used occasionally. In 1989-90 almost 90% of pesticides were used on rice. In Bangladesh, insect pests' outbreak is frequent in rice and crop losses occurred due to rice insect pest attack up to 80% (Kalam, 1998).

The intensification of agriculture has been accompanied by the rapid increase of insecticide use. Increased use of pesticides leads to two primary concerns (Kalam, 1998):

1) Adverse effects on the health of farm workers as well as others exposed to the pesticides
2) Polluted ground water and surface water, causing harm to the water users as well as inland fisheries and other aquatic animals.

Biodiversity is declining due to the effect of pesticide and fertilizer use. Population of native fish species (Channa spp., Heteropneustes clarias, and Anabas testudineus) is now endangered and the traditional rice-fish systems have disappeared. The bird and other small wild animals are in threat of wide spread because of the use of pesticides in rice and vegetables. The rice-based agroecosystem is showing signs of unsustainability. Most of the rice farmers are dependent on insecticides for pest control. A survey conducted by the Non Government Organization Community of American Relief Everywhere (CARE) of rice farmers in Comilla district, a high-input use area showed that 96% used insecticides dur-

ing the dry season. But despite of or due to the prevalence of insecticide use, old farmers reported that insect pests are now more difficult to control than in their youth (Barzman and Das, 2000).

Most of the farmers of Bangladesh are not capable of taking decisions on pest management and pesticide application. Often they apply pesticides when there is no real need or they use wrong chemicals at wrong doses, methods and times. As a result they kill the beneficial organisms easily and create pest resistance causing the greater problems and crop losses. The Brown Plant Hopper (BHP) outbreak in 1991 in Nilphamari and Rangpur districts of Bangladesh has been attributed to the excessive use of pesticides. Aerial application of pesticides on rice has been abandoned in India as early as in 1976 and in Indonesia in 1985 because of its serious harmful effects on environment. A survey conducted by the department of environment indicated that, following the aerial spraying in 1999, cows, calves, goats, fish, honey bees, dragon flies, lady beetles, birds and many other useful insects and animals had been seriously affected by the aerial spraying of pesticides.

There is a suspicion that pesticide residues are common in surface water system, especially in irrigation drains, which ultimately pollute the pond and river water. There are many undocumented cases of chronic health effect of pesticides on farmers and other people. Several factors are supposed to be responsible for chronic health effect such as; improper handling, lack of protective measure, improper storage, use of obsolete pesticides, etc.

The knowledge, attitude and perception of the farmers reflect their practice of pesticide use and decision making process regarding the pest management strategy (Carlson and Mueller, 1987). Therefore, this study was formulated to know the pesticide use practice as well as to evaluate the farmer's knowledge, attitude and perceptions regarding the impact of pesticides on environment.

2. Study Area and methods

Study area: The study area comprised of three districts such as, Kushtia, Comilla and Manikgonj (**Fig. 2**). Comilla is located in the 120-kilometer southeast of Dhaka, the capital of Bangladesh. In terms of Agro-Ecological Zone (AEZ) Comilla belongs to AEZ 19: Meghna Estuarine Floodplain Zone. Kushtia is located 257-kilometer northwest of Dhaka and belongs to AEZ 11: High Ganges river Floodplain area. Manikgonj is in the 50-kilometer northwest of Dhaka and belongs to AEZ 8: Jamuna Floodplain Zone. The typical soil type of these three regions is loamy to clayey, which is suitable for the rice production. The area under rice cultivation of Comilla district in 1995 was 2,53,885 hectare, 3% of national average and rice production share was 4% of national average. Whereas, the area of rice production in Kushtia and Manikgonj accounts for

Figure 2. Bangladesh map showing the study area

2% of national average as of 1995.i The cropping intensity of Comilla is 194.90 %, Kushtia 195.77% and in Manikgonj is 175.59% (BBS, 1995). Besides rice as the major crop, the important farm products are vegetables in Comilla, tabacco in Kushtia and potatoes in Manikgonj. These three regions have good communication and marketing facilities. The farmers of these regions managed to produce three crops per year, with at least two rice crop. More than 90% of the farmers are producing rice as the main crop. Among the rice farmers about 70% are small farmers (0.02 to 1.00 hectare of land holdings) 25% are medium farmers (1.01 to 3.03 ha of land holdings) and only 5% are large farmers (above 3.03 ha of land holdings). Therefore, majority of farmers are in the subsistence level, produce food crops mainly for the family consumption. Only a small proportion of farmers (medium and large) is producing rice for commercial purpose and most of them try to use high input of High Yielding Varieties (HYVs), fertilizer, pesticide and irrigation for more profit. Whereas, the majority of small farmers are not able to use high level of input.

Data collection: The rice farmers who were using chemical pesticide as a pest control measure, were purposively selected as the respondent of the study. Three villages were selected from the three locations such as, village Khoshbash, thana Barura of district Comilla, village Bramanpara, thana Bheramara of District Kushtia and Chandirchar village of Manikgonj Sadar Thana. A total of 86 farmers, 40 from Comilla, 25 from Kushtia and 21 from Manikgonj were selected randomly on the basis of the total number of farmers of the specific area. The face to face interview of the farmers was taken using a structured and pretested questionnaire on the following aspects.

Pesticide use profile: The respondents have been asked to mention the name (trade name) and amount of pesticide used for a unit area, the common name was collected from the list of pesticide provided by the Pesticide Association of Bangladesh. From the quantity of used per unit of area, the amount was calculated for a hectare.

For other information the probable items were given with the assigned number and farmers have been asked to put the appropriate number against the each parameter for each pesticide, the parameter and probable answer are as follows;

Crop stage:	**Basis:**	**Effectiveness**
Nursery -1	Presence of pest-1	Veryeffective:75-100% insects killed-1
Early tillering-2	Action thresholds-2	Effective:50-75% insects killed-2
Late tillering-3	Calendar spray-3	Small effect only:<50% insects killed-3
Booting-4	Crop phenology-4	No effect-4
Flowering-5	Per consultant-5	Makes the insect problemworse-5
Milky-6		Weather-6
Soft Dough-7	Neighbor's farm-7	
Before harvest		

Formulation:	**Application method:**
Granular-1	Hand sprayer-1
Powder-2	Knapsack sprayer-2
Liquid-3	Broad cast - 3
Wettable powder-4	Others traditional methods-4
Others-5	

Use of other control methods; the respondents were asked to check the methods they used among the following,

- Use of resistant varieties
- Use of IPM
- Timely planting
- Improve drainage
- Biocontrols(use of predators/parasites)
- Crop rotation
- Use of low-toxicity pesticides such as oils, soaps, biopesticides and sulfur
- Others(if any please mention)

The knowledge of the respondent farmers was measured by using 10 question providing 3 probable answers, the respondents were asked to check the appropriate answer, score 5 or 0 were assigned respectively for the right and the wrong answer. On the basis of the mean score of the questions the knowledge level of the respondent farmers was measured.

To measure the attitude of the respondent farmers, 10 statements were selected and they were asked to check their opinions in a 5 point's scale. The numeric values for the opinions were assigned as 5 for strongly agree 4 for agree, 3 for undecided, 2 for disagree and 1 for strongly disagree. The statement was positive as well as negative in nature. On the basis of the obtained scale value the attitude of the respondents were categorized as favorable (value 4 & 5), neutral (value 3) and unfavorable (value 1 & 2).

To assess the perception of the respondents towards the environmental impact of the pesticide, the environmental aspects were divided into four issues or elements of issue such as, I) ecological impact, ii) impact on soil, iii) impact on water and iv) impact on air and health hazard. Five statements for each of the issues were selected on the basis of extensive literature search. The statements were put on a five-point scale to measure the degree of their opinion as strongly agree, agree, undecided, disagree and strongly disagree and numeric value of 5,4,3,2 and 1 were assigned respectively. On the basis of the scale value of each of the statement the perception of the respondents have been categorized as strong perception (score 4 and 5), weak perception (score 1 and 2), no perception (score 3) and no response (didn't respond).

The technical aspects and classification of the pesticides were collected from the Pesticide Association of Bangladesh as well as the list of pesticide sales in the regions was collected from the pesticide dealers.

3. Results

3.1 Pesticide use profile

A total of 15 active ingredients with 21 trade name were used by the respondent farmers of Bangladesh in their winter rice crop of the year 2000 (**table 1**). Among the 15 ingredients 3 were fungicides and 12 were insecticides. Most of the insecticides were used to kill the stem borer, green leafhopper and some of grasshopper and gall midge. The fungicide used to control the sheath blight and blast diseases. The frequency of pesticide use was varied from 1 to 4 sprays per crop season. The rate of

Table 1 Chemical pesticides used in 2000 winter rice by the respondents farmers in Bangladesh

Common name	Trade name	WHO category	Type	% of farmers used	kg or L/ha used	Targetted pests
Insecticide						
Carbofuran	Agrifuran 5G	Class Ib	C	1	3.8 kg	Stem borer
	Biesterin 5G	Class Ib	C	16	7.04 kg	Leaf hopper
	Sunfuran 5G	Class Ib	C	9	6.89 kg	Stem borer, Defoliator
	Furadan 5G	Class Ib	C	9	4.89 kg	Stem borer, Grass hopper
	Carabofuran	Class Ib	C	2	0.93 kg	Rice bug
Dioxathion	Bashudin 10G	O	OP	44	8.27 kg	Stem borer, Gall midge
Cyhalothrin	Karate 2.5 EC	Class II	PY	3	5.00 litre	Plant hopper, Green leaf hopper
Cypermethrin	Cymbush 10 Ec	Class II	PY	3	3.74 litre	Defoliators, Green leaf hopper
	Ripcord 10 EC	Class II	PY	2	0.96 litre	Rice hispa
Diazinon	Diazinon 60 EC	Class II	OP	3	5.97 litre	Green leaf hopper, stem borer
DDVP	Nogoz 100 EC	Class Ib	OP	3	9.23 litre	Thrips
Fenitrothion	Sumithion 50 EC	Class II	OP	15	5.83 litre	Leaf roller, rice hispa
Monocrotophos	Monotaf 40 WSC	Class Ib	OP	14	8.76 litre	Stem borer
Malathion	Malathion 57 EC	Class III	OP	2	4.38 litre	Green leaf hoppers, Thrips, Rice bug
	Faifanon 57 EC	Class III	OP	24	2.69 litre	Stem borer, Brown grass hopper
Phosphamidon	Dimecron 100 SCW	Class Ia	C	34	4.23 litre	Rice hispa
Cartap	Padan 50 SP	Class II	C	2	0.86 kg	Plant hopper, Green leaf hopper
BPMC	Baycarb 500EC	Class II	C	26	5.24 litre	Defoliators; Green leaf hoppers; Thrips
Fungicide						
Edifenfos	Hinosan 50EC	Class Ib	OP	7	3.8 litre	Blast
Carbendazim	Knowin 50 WP	Class U	C	44	5.48 kg	Sheath blight
Propiconazole	Tilt 250 EC	Class II	OP	9	7.96 litre	Blast

Frequency of application in a crop season by the respondents: 1=11%, 2=11%, 3=59% and 4=19%
Note: Ia = Extremely hazardous, Ib = Highly Hazardous, II = moderately hazardous;
III = Slightly hazardous; U = Unlikely to present acute hazard in normal use;
O = Obsolete as pesticide, not classified. OP = Organophosphorus compound
C = Carbamate; PY = Pyrethroid

application was not so high. The rate varied from about 1 kg/liter to 10 kg or liter per hectare of land They had the knowledge about rate and frequency of pesticide application from the dealer and also they had considered the cost of the pesticides.

The farmers have used an equal number of 8 Organophosphates and Carbamates pesticides and 3 pyrethroid. Fortunately no organochlorines have been found to be used by the respondents farmers. Bangladeshi rice farmers used mostly category Ia, Ib and II pesticides that the WHO classifies, respectively extremely, highly and moderately hazardous. Almost all of the carbamate insecticides they used are of extremely or highly hazardous category having wide spectrum toxicity to the environment. The

pyrithroids they used were moderately hazardous.

The insecticide Bashudin 10G and Organophosphates was used by the largest proportion of the farmers (44%) followed by the Dimecron (34%) and Baycarb 500 EC (26%). Fungicide Knowin was used by 44% of farmers. Bashudin 10G is an obsolete insecticide which had been used by the largest number of farmers of Bangladesh and the average application rate was also maximum among the pesticides used. Monocrotophos and DDVP are also known as their wide spectrum toxicity. The mostly used fungicide Knowin 50 WP is a carbamate type and it is categorized as unlikely to present acute hazard in normal use.

3.2 Crop stage of pesticide used

Largest number of farmers used pesticides in the early tillering stage (30%) followed by the late tillering and booting stages (**Figure 3**). Vegetative growth stage is the most susceptible to the pest attack, that's why farmers applied mostly in early and late tillering stages than the booting, flowering and milky stages. Major insect pests such as stem borer, leaf hopper and plant hopper attacks are prevalent in these stages. Rice hispa is one of the major insect pests of rice attacks in the mature stage like soft dough (Shepard et al 1995). In Bangladesh, rice hispa infestation is common and more than 12% of farmers applied insecticides in the soft dough stage. Ten percent farmers applied insecticides at the nursery stage which is susceptible to thrip, defoliator, stem borer, green leaf hopper and plant hopper (Mueller, 1980).

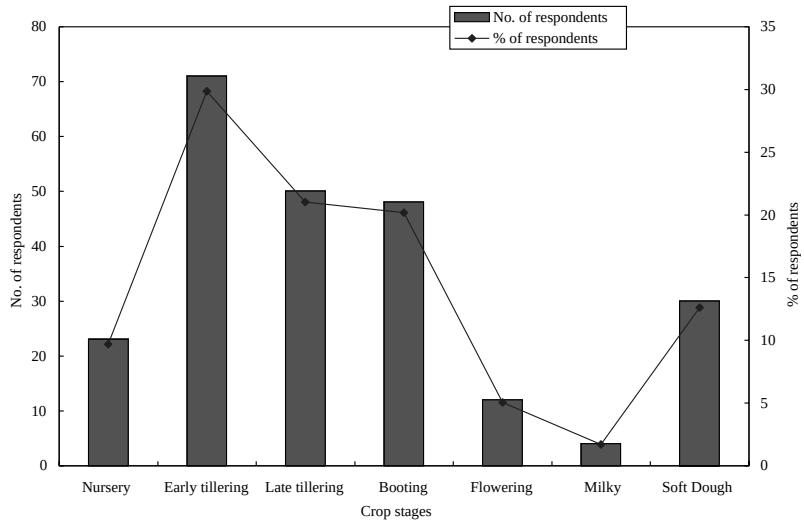

Figure 3. Stages of pesticide used to control rice pest by the selected farmers

3.3 Basis of application

Almost an equal proportion of farmers used pesticides on the basis of presence of pest and action threshold (**Figure 4**). Twenty three percent of the farmers used pesticide after consultation with the personnel of the Department of Agricultural Extension and 4% used as calendar spray for preventive measure. As reported by the Pesticide Association of Bangladesh many farmers apply pesticide mixed with basal dose of fertilizer as preventive measure, without any basis.

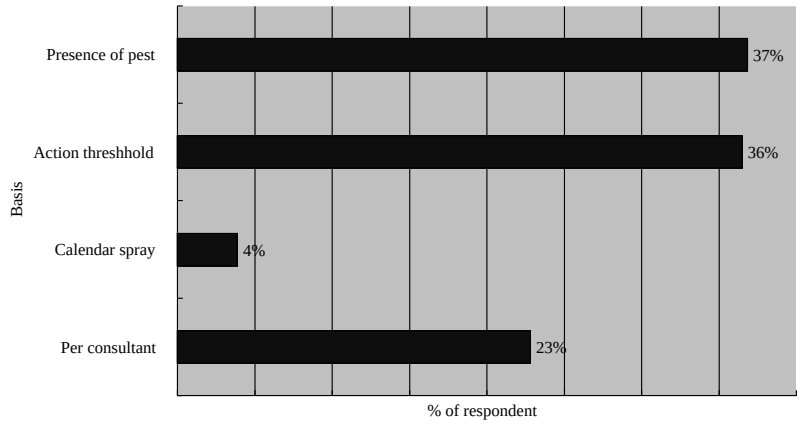

Figure 4. Basis of pesticide application by the selected rice farmers.

3.4 Application methods

Among the surveyed farmers of Bangladesh 57% used hand sprayer and 8% used Knapsack sprayer to apply the pesticides on the crop field (**Figure 5**). Remaining 18% farmers used broadcast methods and 16% used other traditional methods. The sprayers they used were not in a good condition. The hand sprayer they used includes a container with broom and sprinkled the pesticide with broom. Most of the farmers don't have any sprayer of their own; they borrowed it from relatively richer farmers. They didn't have any training about the sprayer use and precaution. Therefore, the spray was always associated with high risk of exposure. The farmers broadcast the granular insecticide keeping in an open bowl or basket and broadcast by bare hands and feet. The traditional methods they used are very unscientific. For example they brush the crop field. In this method, usually the insecticide is mixed with water in an open bowl or a big can then date palm leaf is soaked in it and the standing crop plant is brushed. During the mixing and brushing the farmers as well as the environment are exposed to pollution. No farmers have used any protective measure such as musk or gloves. According to the pesticide agent and leaflet provided by the

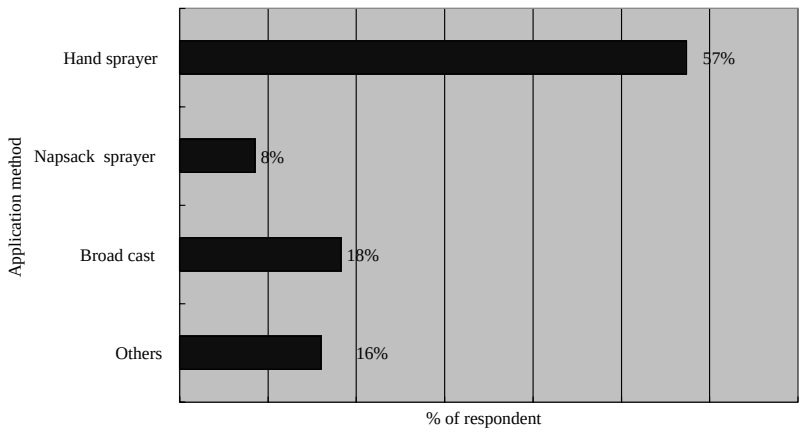

Figure 5. Pesticide application methods used by the selected rice farmers

Department of Agricultural Extension, the measuring unit is being used as spoonful, handful or lidful.

3.5 Effectiveness of pesticide

An equal proportion of 48% of farmers said that the pesticide used to control pest was very effective (75 to 100% pests were killed) and effective (50 to 75% pests were killed). Only 4% farmers said the pesticides had small effect (less than 50% pests were killed (**Figure 6**). Barely no respondent perceives an insecticide or fungicide they used were ineffective or as causing more pest problems. These results indicate that the respondent farmers are not aware of the concept of pest resurgence and natural enemies. To them, insecticides are always a solution to, never a cause of, insect pest problem.

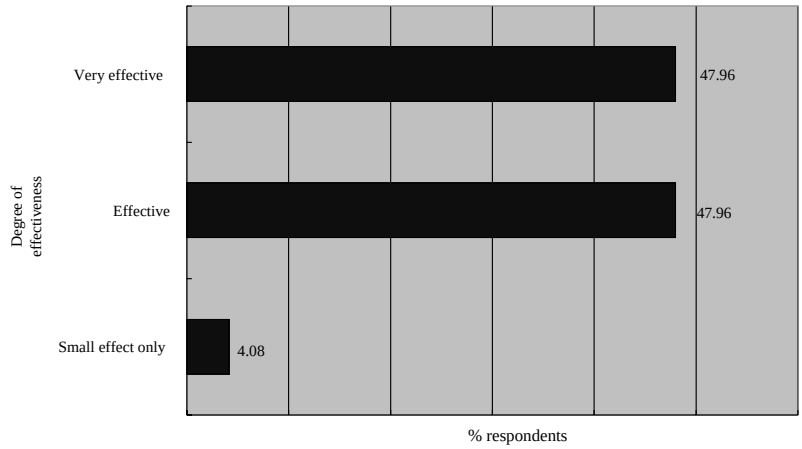

Figure 6. Effectiveness of the pesticides as perceived by the respondents

3.6 Alternative methods used for pest control

Because of late introduction of pesticide in Bangladesh agriculture the farmers are used to control pest using other traditional methods besides insecticide. In these cases they used indigenous knowledge to control pest not to avoid the hazard of pesticide, mainly to minimize the production cost. Among the other methods, 40% of the farmers used crop rotation as an alternative to chemical pesticides use, 19% used timely planting and 15 % used resistant varieties. Only 2% of the farmers used Integrated Pest Management (IPM) technique to control pest of rice (**Figure 7**). Biocontrols means that they use bird to feed the insect. Remaining 12% farmers used other methods such as, soap, karosene oil, light and net trap to control insect. In certain extent they pull the insect larvae by hand also.

3.7 Knowledge about the pesticide use

On the basis of the average score of the questions the knowledge level has been categorized as poor (the average score up to 1.5), moderate (the average score from 1.6 to 3.0) and good (average score above 3.0). The study shows that the farmers possessed moderate level of knowledge in the most of the aspects of pesticide use. Out of 5.0 average knowledge score varied from 0.5 to 3.7 for different questions (**Figure 8**). They have poor knowledge regarding the effect of excessive use of pesticide in the crop field (Q9), the direction of pesticide spray (Q4) and the worst impact of improper handling of pesticide (Q10). On the other hand, the respondents have good knowledge regarding the purpose of Diazinon

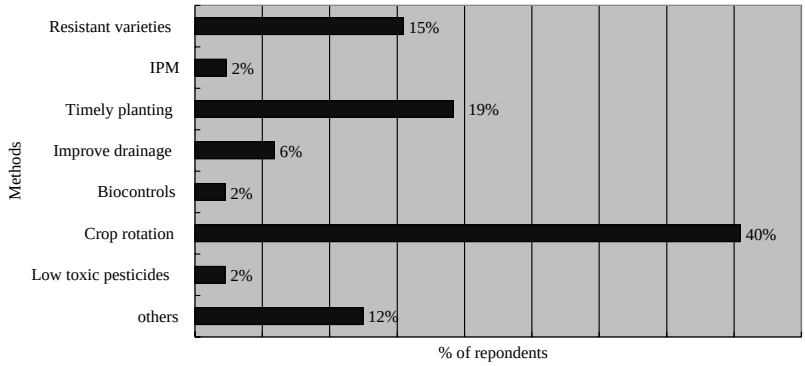

Figure 7. Alternative methods of chemical pesticides to pest control by the selected rice farmers

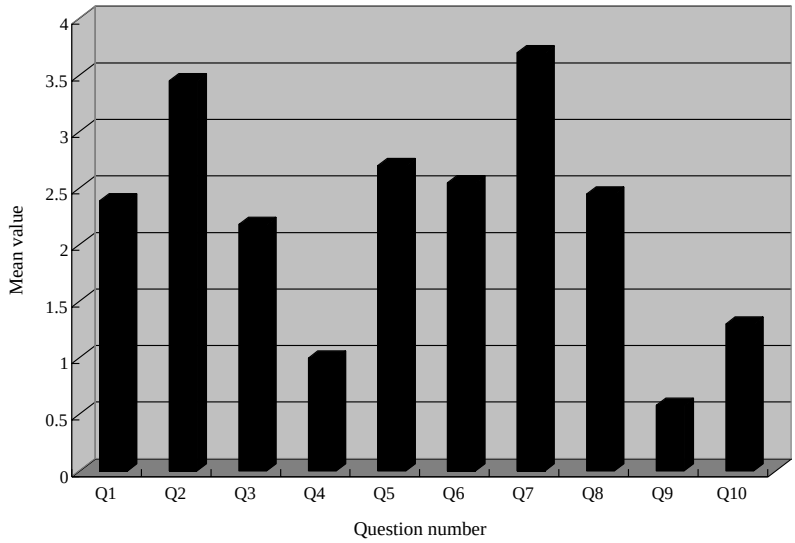

Figure 8. Average knowledge level of the respondent farmers about the chemical pesticide use

use (Q2, the average score being 3.5) and the cause of the harmfulness of the pesticide (Q7, the average score is 3.7). Thirty seven percent farmers said that using traditional hand spray with broom is the appropriate method for pesticide application, whereas, 41% said the sprayer is more appropriate. Most of the farmers know that pesticide is a poisonous chemical, but they don't have knowledge that the excessive use may create pest resistant and improper handling may cause health hazard (**Table 2**). Forty six per cent farmers said that pesticide should not be used just at scorching noon. Farmers have confusion regarding the direction of pesticide spray, as 45 % said opposite to the wind and 40% said towards the wind direction. Because of the risk of exposure to the applicator, pesticide should be sprayed on the wind direction and only 15% farmers knew this. Forty four per cent respondents have knowledge that the pesticide application in mature stage of crop is the most harmful for the consumer, therefore they do not spray. It is noteworthy to mention that among the respondent farmers nobody has ever had training regarding the pesticide handling and precaution.

Table 2 The knowledge of the respondents farmers of Bangladesh regading the different aspects of pesticide use

Index	Questions	% of respondents answered		
Q1	Appropriate way of pesticides application of the field with brooms	i) Using sprayer	ii) Realesing one corner	iii) Traditional hand spray
		41	22	37
Q2	Purpose of Diazinon use	i) to control harmful insect/disease*	ii) To control disease	iii) to control weed
		59	30	11
Q3	Time when pesticide should not be applied	i) Just at scorsching noon*	ii) From 10-11 at morning	iii) Afternoon
		38	42	20
Q4	Direction of pesticide spray	i) Towards the wind direction	ii) Opposite the wind	iii) both the direction
		15	45	40
Q5	Appropriate depth of stagnant water to use granular pesticides	i) 5-10 cm*	ii) 0 cm (surface)	iii) 25-100 cm
		46	40	14
Q6	Most harmful stage of pesticide use for the consumer	i) Mature stage*	ii) seedling stage	iii) tillering stage
		44	30	26
Q7	Reason behind harmfulness to the consumer	i) poisonous chemical*	ii) natural abstract	iii) not poisonous
		64	20	16
Q8	Reason behind using pesticides	i) to control harmful insect/disease*	ii) to control beneficial insect	iii) to increase the soil fertility
		42	13	45
Q9	Effect of excessive use of pesticides in the crop field	i) create pest resistant*	ii) production increase	iii) reduce the pest attack
		10	31	59
Q10	Worst impact for improper handling of pesticides	i) cause health hazard*	ii) increase cost	iii) crop damage
		23	43	34

Note : `*` indicate the appropriate answer

3.8 Attitude towards the pesticide use

About two third of the respondents think pesticide is the best way to control pest. The largest number of farmers showed favorable attitude towards the timely and balanced application of pesticide (statement 5), followed by the statement 7, 1 and 2 (**figure 9**). The highest number of e farmers showed neutral attitude towards the statement 3, which is on the issue of ecosystem. About half of the respondents showed unfavorable attitude towards the statement 10, which the pesticide is responsible for health hazard or food poisoning. Therefore, the attitude of the farmer was found varied depending upon the issue but there was no significant relationship between the socioeconomic characteristics of the respondent farmers. On an average the farmers showed favorable attitude towards the pesticide use.

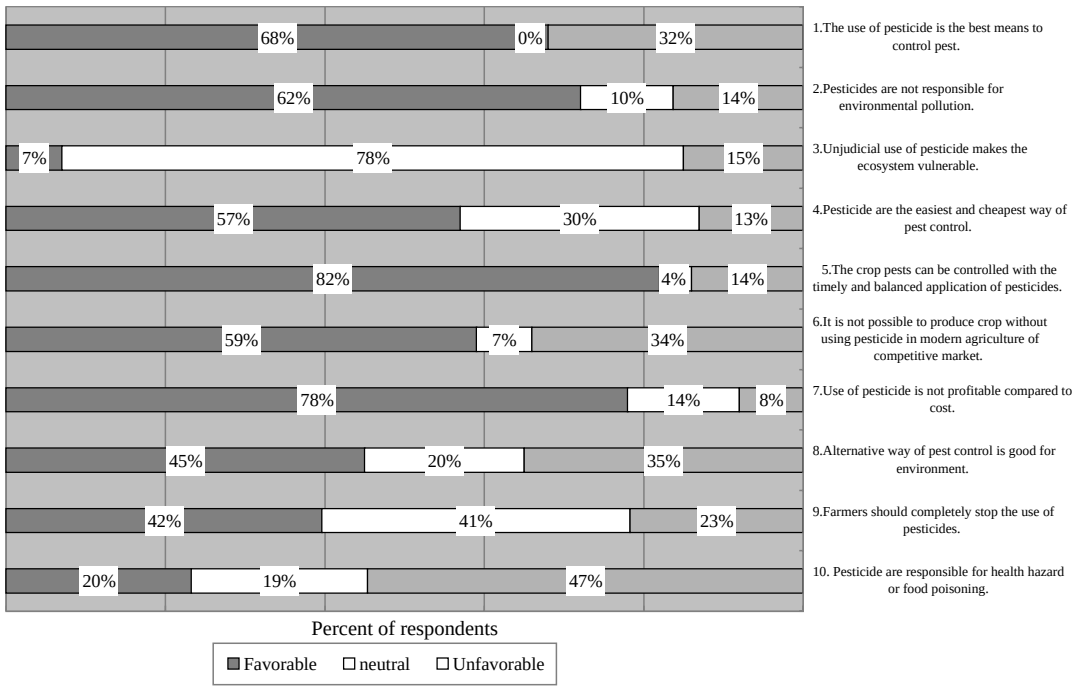

Figure 9. Dimension of the attitude of the respondent farmers towards the chemical pesticide use

3.9 Perception about the environmental impact of pesticide

The average value of perception of the farmers about the 5 major issues was varied from 2.4 to 2.7 (**table 3**). The level of perception of the respondents about the ecological and impact on air and health hazard were higher than the impact on soil and water. Respondents have poor perception regarding the impact on water. A good proportion of the farmers didn't have any perception about any of the issues. Some respondents did not response to the statement, either.

3.10 Socio-economic characteristics of the respondent farmers

The socio-economic characteristics of the respondents are shown in table 4;

Age: The age of the respondent farmers ranged from 23 to 70 years, the average being 40.45 years. Seventy three percent of the respondent is below 45 years old and 27% are above 45. It is evident from the present survey that most of the respondent farmers are relatively young.

Education: The average level of education of the respondent farmers was 6.20 years of schooling ranging from 0 to 14 years of schooling. Thirteen percent of the respondent has no formal schooling experiences, 33% have had 1 to 5 years and 43% have had 6-10 years of schooling. Only 9 % have had 12 to 14 years of schooling.

Land under cultivation: The average land under cultivation of the respondent farmers was 1.42 hectare which is much higher than the national average of .20 hectare (BBS, 1995). This is because farmers having comparatively larger land under cultivation usually use pesticide for plant protection. The range of land under cultivation was 0.18 to 4.05 hectare. It is found that almost all of the cultivable areas of the respondent farmers are in rice cultivation.

Table 3 Level of perception of the respondent farmers of Bangladesh towards the impact of the pesticides on the environment

Index of statement	Statement	Mean value	Std.	Degree of perception of the respondents (%)			
				Not respond	No.	Poor	Strong
I. Ecological impact							
S1	Many types of birds, fish and plant become extinct by the effect of highly toxic pesticide.	3.3	0.5	19	36	25	20
S2	Unbalance use of pesticide make the ecosystem worst.	2.2	0.8	11	35	31	23
S3	Many species of harbecious plant of medicinal value extinct by the continuous use of highly toxic pesticides.	2.7	0.6	0	49	21	30
S4	Natural beauty of rural areas have not destroyed by the excessive pesticide use (such as, extinct of many wild flowers, butterflies, fireflies, etc.)	2.4	1	14	28	38	20
S5	Many fish are caused by diseases by the pesticidal effect.	2.7	0.8	0	21	35	44
Average		2.7					
II. Impact on soil							
S1	Application of toxic chemicals in the crop field harm the earthwarms, soil microbes which deteriorated soil fertility.	2.3	0.5	14	30	36	20
S2	Use of excessive pesticide accumulate in the soil which is responsible for soil toxicity.	2.3	0.5	12	45	0	43
S3	Pesticide accumulate in soil not harmful for the crop.	1.6	1.3	22	20	38	20
S4	Many pesticide such as, DDT, aldrin, heptachlor, dieldrin and chlordane remain unchanged in the soil but not harmful for the soil.	3.3	1.4	18	26	26	30
S5	Pesticide has no effect on soil structure.	3.3	1.3	30	25	25	20
Average		2.6					
III. Impact on water							
S1	Long time and heavy use of pesticides may pollute the aquatic environment through the contamination of unused portions of pesticides.	3.1	0.7	22	30	18	30
S2	Through irrigation water pesticides runoff to the rivers, canals, etc.	2	1.1	18	27	20	35
S3	Many fishes have been extinceted by the effect of pesticides used in the crop field.	2.7	1.2	15	35	19	31
S4	Ground water is not polluted by pesticide leaching from crop field.	2.7	0.9	17	36	17	30
S5	Pesticide is not responsible for water pollution.	1.3	1.3	26	21	31	22
Average		2.4					
IV. Impact on air and health hazard							
S1	It is very dangerous for the applicator to be affected by the poisonous pesticides if not properly handled.	3.2	0.8	9	36	20	35
S2	Several diseases have been observed to be caused by pesticide used.	2.2	0.6	12	44	6	38
S3	Food produce by using pesticide is safe for the consumers.	2.2	1.2	20	35	18	27
S4	During the pesticide spray the air polluted by spray drift which causes health hazard to the applicator neighbours.	3.1	0.8	23	23	31	23
S5	The granular insectide used in the paddy field exposed to the air and pollute the surroundings.	2.7	0.9	25	35	33	7
Average		2.7					

Table 4 Socio-economic characteristics of the respondent farmers in Bangladesh

Characteristics	% of respondent	Min	Max	Mean	STD
1. Age(yrs)		23	70	40.45	9.59
Below 45 years	73				
Above 45 years	27				
2. Level of education		0	14	6.2	4.09
No schooling	13				
1 to 5 years of schooling	43				
6 to 10 yrs. of schooling	33				
11 to 14 yrs.of schooling	9				
3. Total land area(ha)		0.18	4.05	1.12	0.79
4. Area under paddy cultivation (ha)		0.15	3.24	0.89	0.65
5. Total farming experience(yrs)		2	50	19.52	10.09
6. Paddy farming experience (yrs.)		1	50	17.95	10.92

Occupation	Primary		Secondary	
	No.	%	No.	%
Agriculture	50	58	35	41
Business	20	23	18	21
Service	5	6	0	0
Wage labor	7	8	7	8
Others	4	5	2	2

Farming experience: The average farming experience of the respondent farmers was 19.52 years ranging from 2 to 50 years. The experience of paddy farming ranged from 1 to 50 years with an average of 17.95. It seems that some respondent farmers did not start rice farming from the beginning.

Occupation: Among the respondent farmers 58% and 41% of them are doing farming as the primary and secondary occupation respectively. The second highest proportion of respondents is engaged in business, which is 23% as primary and 21% as secondary occupation. The business activities are mostly small and medium size shop keeping. Also some well being farmers are doing stock business, buy farm products in the season at the time of cheaper prices and sell in the off season at high prices. Only 5% of the respondents are engaged in service as primary occupation. Services include mostly teaching in the school and religious educational institutions.

4. Discussions

Unfortunately for rice farmers in Asia, there is no shortage of rice pests, with major crop losses occurring from several classes of pests and a number of pest types within each class. As perceptions about the severity of rice pests have evolved in Asia, rice producers have become heavy users of all types of pesticides. The case of Bangladesh is no exception in this situation.

The respondent farmers used mostly insecticides, because in Bangladesh insect infestation is more serious than diseases in rice production. The rate of application of insecticide was found 1 to 10 kg/ha with less frequency of 1 to 4 sprays per crops. The rate of application and frequency was less for the small to medium farmers than the large farmers. The rich farmers used more frequent and high dose of pesticide. But nobody has ever exceeded the recommended level. Among the pesticide used except

Malathion all of them are either extremely or highly hazardous class of WHO. Bashudin 10G an obsolete pesticide commonly used by the farmers to control stem borer and, which is supposed to no longer be used, but still being in farmer's use. The farmers are still using the organophosphorous pesticides such as monocrotophos, DDVP, which are known for wide spectrum toxicity (Rola and Pingali, 1993). Farmers also used phosphamidon, which is extremely hazardous. Monocrotophos and phosphamidon are subjected to the prior informed consent of WHO (WHO, 1998) before use. Almost all of the carbamates pesticides are classified as highly hazardous and pyrethroids as moderately hazardous. All of the pesticide is highly to moderately toxic to the birds, bees, fish and other aquatic animals. The mass killing of birds including poultry is due to use of toxic pesticides in the crop field adjacent to the homestead. In fact the insecticide use in rice field is mainly reactive rather than prophylactic. Not only the insecticide is contaminating the environment; ultimately it is entering the food cycle through respective food crops.

Due to lack of strict enforcement of regulation and supervision, the traders have been marketing extremely hazardous pesticides. According to 'The Pesticide Rules, 1985' that all pesticide either manufactured or imported should be registered to the Authority. For registration an application is submitted with the relevant data which is reviewed by a Technical Advisory Committee with a sample of the specific pesticide. The required data include; physical and chemical properties, efficacy data, toxicological data, residues and their fate in the environment. But in practice the assessment of environmental impacts or residue analysis is hardly undertaken due to the lack of expertise in the field as well as laboratory facilities (Gaston, 1986). The registration is valid for 3 years. In chapter II, section 8 of the regulation, it is said that the certificate of registration may be cancelled but not mentioned when the certificate will be cancelled. Regarding import in chapter IV it is mentioned that 'No pesticide shall be imported through a rout other than the recognized custom frontier stations of Bangladesh'. But huge amount of banned and highly toxic pesticides are being smuggled from India through the boarder (Ahmed, 1992). It has been reported by the Institute of Development Policy Analysis that the pesticide like Eldrin and Endrin are sold with different labels in Bangladesh. The suppliers continue to sell many chemical pesticides proscribed by the government, and 12 particularly controversial pesticides dubbed the `dirty dozen` by activists campaigning worldwide to stop its manufacture (IPS, 1998). There is a provision of licensing of the pesticide dealers for sale but it is not clearly stated what will be required for the qualification of the license holder, so anyone may get license. Therefore, it is found that the registered dealer also does not have any knowledge about the pesticide handling. The regulation said it could be duplicate and transferred to anybody. It is not said in the regulation that the sales dealer might have training on pesticide. The main drawback of this regulation is in chapter VII section 33 subsection I (a) which gives the provision to state the name of the manufacturer, formulator or repacker in the label even he/she is not the person in whose name the pesticide is registered. For this reason it is very difficult to identify the respective person for punishment. Therefore, taking the advantage of the weak point of regulation the illegal business of pesticide is going on and it is not uncommon that the violation of rules is taking place.

In Bangladesh the cropping intensity is higher, farmers are producing three crops in a year and more or less the pesticide are being in used for three of the crops. Therefore, the health and environment are continuously exposed to the pesticide that is being used in the crop field. Moreover, the farmers used mostly hand sprayer and other traditional methods. The spray methods they used are associated with high risk of exposure and contamination (Pingali and Roger, 1995). The sprayer they used usually not in a good condition and user doesn't have training regarding the safe use of pesticide. The traditional meth-

ods are very much unscientific and high risk of health, environmental contamination. Nobody has been reported to use any protective measure during and after the pesticide application.

Because of cost involvement calendar spray is not common phenomenon for Bangladeshi farmers. The farmers applied pesticide by the presence of pest and at action threshold. But it is not undoubted that their conception about the action threshold might not be the real one situation. No respondents have been found to have formal training regarding pesticide use. Therefore, there is prevalence of application at wrong time and wrong pesticide. The Pesticide Association of Bangladesh reported many farmers apply pesticide mixed with basal dose of fertilizer as preventive measure, without any basis by the encouragement of the traders.

Farmers perceived that the pesticides they used were very effective (100% pests controlled) or effective (more than 75% pest controlled), which encouraged them to use more chemical pesticides to prevent the loss. Nobody had perceived that pesticide might create pest resistance and destroy the natural enemies. To the farmers pesticide is always and only the effective means to pest control. Although most of them followed any of other alternative methods to pest control, among which crop rotation were adopted by the highest proportion of the farmers followed by timely planting and resistant varieties. Only 2% farmers used IPM technique to pest management. Because IPM is a knowledge-intensive technology that leads to changes in the knowledge, attitudes, and practices it is difficult to follow by the less educated farmers like Bangladesh (Rola and Pingali, 1993).

Farmers possessed poor to moderate level of knowledge about the different aspects of pesticide application. Average knowledge score varied from 0.58 to 3.7 for different questions. Only 41 percent farmers said that sprayer is the appropriate way to pesticide application and rest of them said either traditional method or releasing in one corner of the crop field. Most of the farmers know that pesticide is a poisonous chemical, but they think that excessive use may reduce the pest attack instead of creating pest resistance. Similarly most of them don't know that improper handling may cause health hazard. A good number of farmers think that pesticide not only control pest as well it increases the soil fertility. This might be due to the reason that the over campaigning of pesticide company representative. The knowledge of farmers was greatly influenced by their level of education. The average level of education of the farmers was 6 years of schooling. The low level of education coupled with lack of communication exposure of the farmers might be a reason to have low level of knowledge regarding the harmful impacts of pesticide on health and environment.

Due to low level of knowledge the farmers are using highly toxic pesticide and responsible for making the environment and ecosystem vulnerable. Taking the opportunity of the illiteracy the pesticide trader and dealers are pushing the farmers the dangerous pesticide to use in their crop field. Not only that the suppliers pack the pesticides in insoluble containers, quite often in bottle to attract the farmers who use the bottles and other containers for different domestic purposes without realizing the hazards (IPS, 1998). In this regards it might be mentioned that the pesticide distribution in Bangladesh is fully under private sector. The respective company has field representative of their own, those who are responsible for sales of pesticide in a specific area directly to the farmers. Besides, monthly salary there is provision of commission on the basis total sales annually for the field representatives. Therefore, they are always trying to convince the farmers to use their products keeping their monetary gain as the main target.

In general the farmers showed favorable attitude towards the pesticide application. As the farmers perceived that the pesticide is effective way of pest control without any detrimental effect, they formed

the favorable attitude towards the pesticide use. Many farmers think that the pesticide is a medicine to treat the crop to be recovered from the pest attack. The issues, which were not perceived by the farmers, they showed neutral attitude towards them. It might be due to the influence of socio-economic characteristic such as, age and education and occupation (Rola and Pingali 1993).

Knowledge, attitude and perception of the farmers determine the practice of the pesticide. The farmer's perception about the impact of the pesticide on the environment was not good. It might be due to the fact that the average age and education of the farmers were low. Because perceptions are influenced by individual's socioeconomic characteristics, experience (age) and education could significantly reduce the error in one's perception. It is quite difficult to perceive the impact of pesticide with an average low level (6 years of schooling) and without any training. The perception of the farmers regarding the impact of pesticide was not very strong. Their perception was at moderate level ranging from 2.4 to 2.7. The proportion of the farmers having strong perception towards the different aspect was varied from minimum 7 to maximum 44 %. But the frequency is higher around 20 to 30 percent. The same proportion of the respondents has no perception. Due to the lack of education and mass media campaign of the farmers were not able to perceive the possible negative impact of the pesticide on the ecosystem, soil, water, air and health. More over, due to the over publicity of the pesticide trader's farmers only know the `so called` benefit; the traders never explained the negative impact of the pesticide to the farmers. In most of the cases the pesticide traders push the farmers to buy and use when it is not necessary. It is worth mentioning that there are over 20,000 registered pesticide dealers and the same number would be as unregistered and are selling pesticide along with other commodities even with food. Although the pesticide regulation does not suppose to permit anybody to sell pesticide without the government authority's supervision of license as well as the storage and shop.

5. Conclusions

In Bangladesh in the recent years growing use of pesticides by farmers, unaware of the negative effects pose a big challenge to health, environment and the declining economy of the country. Cropland is a major source of sediment and the sediment resulting from soil erosion is regarded as the largest pollutant that affects water quality. The occurrence of fish epidemics in different parts of the country is apprehended by the scientist and local people that fish mortalities in the open water of Bangladesh have occurred due to uncontrolled use of pesticides in irrigated rice field (Ahsan, 1990).

Some extremely hazardous pesticides are used in Bangladesh, although these are prohibited in the producing countries. Among the insecticides used by the Bangladeshi farmers, Bashudin 10 G, Diazinon 60 EC, Sumithion 60 EC and Padan 50 SP have already been banned for use on rice in Indonesia in 1986. But in Bangladesh, these are not restricted yet. Moreover, in Bangladesh the existing pesticide laws and regulations are not strictly enforced in relation to import, formulation, repackaging, distribution, advertising and use of pesticides. Therefore, obsolete pesticide like Bashudin are also still being using by the farmers and available in market even in low price compared to others (Rola and Widawsky, 1998).

The environmental degradation linked to agriculture is the impact of toxicity from improper pesticide use. Here, the damage is less on agricultural productivity than the people who may be inadequately protected from the chemicals are (Ramaswamy, 1995). The greatest threat of toxic exposure is from the used crop, which puts both producers and consumers at risk. The other type of toxicity-related damage is

from pesticide run-off, and especially from pesticide residues in ground water. Therefore, modifications in regulations concerning pesticide handling and application will minimize most pesticide-related environmental and health damage. The hazardous pesticide should be withdrawn from the market as early as possible. The provision of penalty for violating the regulations might be included in the registration terms and conditions. Along with strict regulation, the farmers the end user should be educated to be perceived the probable impact of their practice towards the health and environment. The farmers should be provided with proper training and mass media campaign.

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【Article】

The Benefits and Problems of Cash Crop Farming in Eastern Nepal: A Case Study of Ilam District

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Abstract

Farmers in the hill region of Nepal face many challenges in trying to attain food security. The first part of this paper outlines the problems facing farmers in the hill region and examines how the changes in the policies of the Government have affected agricultural production in the hills since the First Five-Year Plan in 1956. Since the 1990s, agricultural policies in Nepal have focused on the growing of cash crops, as a way to increase the incomes of farmers and thus enable them to buy food to meet their food sufficiency needs. The second half of this paper takes a look at the development of agriculture in Ilam District, which is undergoing a change towards cash crop production. The benefits and problems of cash crop farming are examined with the help of data collected in the field. It is found that while traditional cereal crops play an important part of farmer's incomes, cash crops can provide a good source of income and some of the crops had beneficial effects on the environment. However, problems with extension services and price instability still have to be overcome if this form of farming is to provide a stable living for farmers.

1. Introduction

Nepal is a landlocked mountainous country surrounded by China to the north and India to the west, east and south. Agriculture employs over 80% of the population but the mountainous nature of the country allows for only about 20% of its total land to be cultivated. (Nepal Research Associates, 1999) The main components of the subsistence farming system in Nepal are land, livestock and forest resources. A proper balance between these components is necessary in order for this system to be sustainable. However, population pressures on the land have made it difficult for farmers to earn a living. With 42% of the population living below the poverty line, farmers are faced with a desperate situation and "food shortages in mountain areas has set in motion a chain reaction towards an integrated process of poverty - resource degradation - scarcity - poverty." (Partap, 1995, 2)

Despite this deterioration of both the economy and environment of mountain areas in Nepal, the growing of cash crops is seen as one way to help farmers improve their current situation. (Sharma, 1997, Partap, 1995) Ilam District in eastern Nepal is one region that is experiencing a change from subsis-

tence to cash crop farming. Not only are cash crops helping farmers achieve food security, some of the crops grown are also increasing the vegetation coverage of the land. The purpose of this paper is to firstly provide a brief outline of the problems that farming in the hill region of Nepal has faced. Secondly, the development of farming in Ilam District will be examined, supplemented with some field level data collected from one Village Development Committee (VDC), in order to give an idea of the current situation of farmers. The experiences of this district are important to examine in order to understand the benefits and problems that farmers face in making a success out of cash crop production. It will be shown that although cash crop farming can help farmers to improve their food security situation while helping to preserve the environment, institutional deficiencies that have existed in extension and marketing services for many years need to be overcome for this concept of hill farming to see any sustainable success.

2. Importance of Hill Agriculture in Nepal

Nepal is divided into three distinct geographical regions: mountain, hill, and terai (plain). (see **figure 1**)

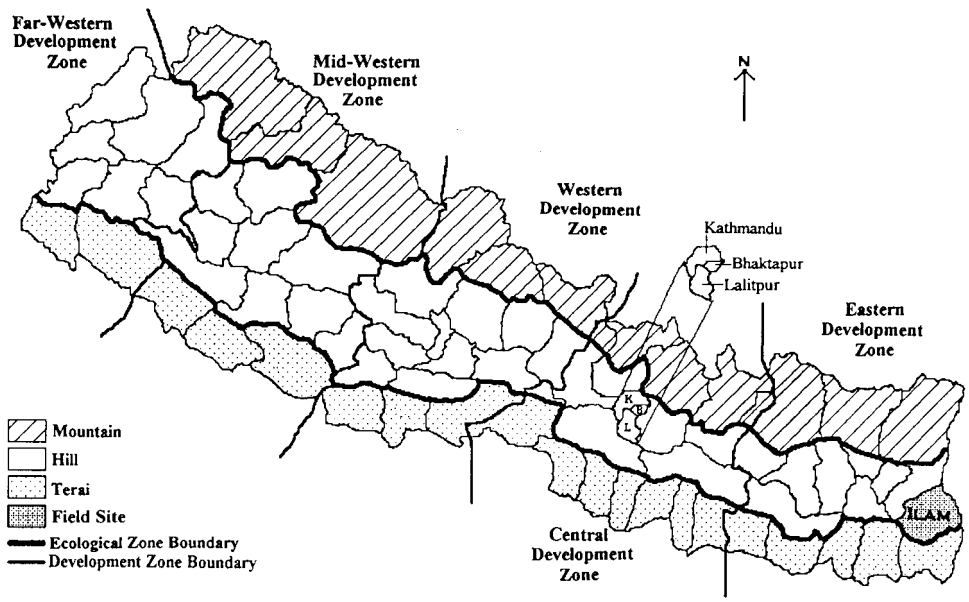

Figure 1: Map of Nepal

The mountain region covers one-third of total area of which only two percent is cultivable. This is a very rugged region, ranging in altitude from 4877m to 8848m, and people earn a livelihood by raising sheep and yaks, which provide milk, hides and wool. The hill region constitutes 42% of the total land area of Nepal but only about 10% of this is suitable for farming. With an altitude variation of 610m to 4877m, the hill region is home to about 46% of the total population. The terai region is the plain area of Nepal constituting 23% of total area of which 40% is under cultivation. The subtropical climate and fer-

tile soil has made the terai the grain belt of the country. (Nepal Research Associates, 1999)

In the hill and mountain regions, population pressures were low up until the first quarter of the twentieth century. Whenever population pressures were felt, people would migrate to places such as "Assam, Meghalaya, or Manipur to earn cash or to the terai for a better livelihood (Caplan 1970 and Dahal 1983)." (Dahal, 1994, 17) However, migration to the terai did not occur prior to the 1950s because it had not been habitable due to problems with malaria.[1]

With the start of a malaria eradication program in 1952, people were able to clear and settle land in the terai, which helped to alleviate some of the population pressures in the mountain and hill regions. This migration is evident when looking at the population and population growth rate figures for Nepal (see **table 1**). During the 1981 census, the hill region had the greatest number of people living in it but as of 1991, the terai became the most populous region, consisting of 46.7% of the total Nepalese population. The population growth rate figures are also extremely high for the terai at 4.2% and 2.8% during the 1970s and 1980s respectively and this has been attributed to the migration of people from the mountain and hill areas.

Table 1: General Population Figures for Nepal (1971-1991)

Population	Nepal	Mountain	Hill	Terai
1971	11,555,983	1,138,610	6,071,407	4,345,966
1981	15,022,839	1,302,896	7,163,115	6,556,828
1991	18,491,097	1,443,130	8,419,889	8,628,078
% (1991)	100	7.8	45.5	46.7
Growth Rate (%)				
1971-1981	2.7	1.3	1.7	4.2
1981-1991	2.1	1	1.6	2.8
Population Density				
1971	78.5	3.97	98.97	127.75
1981	102.1	4.54	116.77	192.74
1991	125.6	5.03	137.25	253.63
Land Area (km^2)	147,181	51,817	61,345	34,019
%	100	35.21	41.68	23.11

Source: CBS 1971, 1981, 1991

The development of hill agriculture is of extreme importance to Nepal because this migration trend to the terai is something that is not sustainable. The land area of the terai is limited and high population growth is leading to "reckless destruction and encroachment of forest resources and uncontrolled resettlement in Tarai regions by in-migrants have resulted in improper land utilization practices and thereby environmental stress (Ojha, 1983; NCP, 1988; Rana and Thapa, 1975)." (Siwal, 1995, 86) More importantly, however, the "out-migration of a large number of people has so far made no significant impact on improving economic conditions in the hill and mountain regions." (Silwal, 1995, 86) Since the climate and topology of the mountains is not conducive to food production, the development of hill agriculture is of utmost importance to the future of the Nepalese people.

3. Problems with Farming in the Hill Region

The farming practices of the hill region in Nepal are primarily subsistence in nature, with the growing of cereal grains and rearing of livestock as its main activities. Livestock provide the manure that is needed to fertilize the fields. Forests are the main source of fodder for livestock as well as provide fuel for cooking purposes. The figure below shows the relationship between land, livestock and farmers of the subsistence agriculture system prevalent in the hill region.

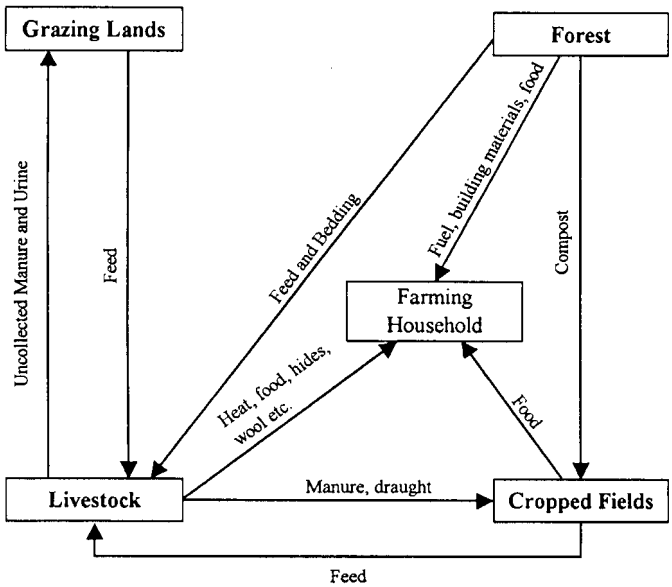

Figure 2: Interrelationship of livestock with forests, agriculture and human subsistence in typical middle hills agriculture area
Source: LRMP (1986)
Taken from: Basnyat (1995, 20)

Population pressures on the land, however, has led to the clearing of forests and adversely affected the balance between the main components of farming. Uncontrolled clearing of land can wreak havoc especially due to the fragile nature of mountain environments. Deforestation of hillsides results in many problems such as erosion of soils causing landslides, reduction in watershed areas causing shortages in drinking and irrigation water supplies, and loss of forested areas which are desperately needed for fuel and fodder purposes. On top of these environmental problems, it is very difficult and expensive to build roads and thus many villages remain isolated making it difficult to provide desperately needed marketing, credit, and extension services to the farmers.

Development planning in Nepal is conducted through a series of Five-Year Plans, the first of which started in 1956. While the first three Plans had objectives to increase agricultural production by improving input supply and extension services, the 1960s were characterized by stagnant growth in production while the population continued to grow. Seddon (1987, 44) notes that by the beginning of the 1970s, "given the relative stagnation in agricultural production, the growing pressure of population, and a rapidly increasing trade deficit, Nepal faced an economic crisis. At the center of this general economic crisis was a crisis of food production."

Given these circumstances, the Fourth Plan (1970-75) put the development of the agriculture sector as its top priority. This Plan emphasized the development of agriculture by exploiting the comparative advantages of each of the ecological regions; livestock in the mountains, horticulture in the hills, and cereal and cash crop production in the terai. A fundamental problem with this Plan and that of the Fifth Plan (1975-1980) was that it did not take into consideration the fact that even within one ecological zone, there are variations in the climates and types of crops that can be grown in them. (Basnyat 1995, 33) This focus on developing horticulture in the hill region can be seen as a major reason for the slow growth in the area under cultivation for cereal crops throughout the 1970s. (**figure 3**)

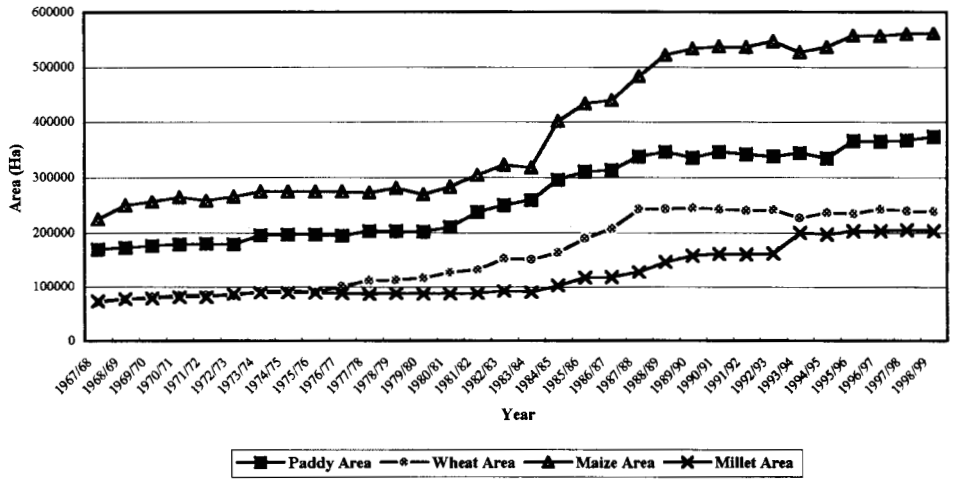

Figure 3: Estimated Area under Cultivation for Selected Cereal Crops in Hill Region (1967-1998)

In fact during the Fifth Plan, the production levels for paddy, maize, and millet saw marked declines of 4.06%, 6.78%, and 3.79% annually. Wheat was the only crop to experience significant increases in area and production levels at 5.27% and 5.52% per year, respectively.

With the start of the Sixth Plan (1980-1985), the attainment of food self-sufficiency in the hill region was emphasized. This had the effect of increasing the area of land under cereal crops. As can be seen in figure 3, the area under cereal cultivation grows at a faster pace after 1980. Annual growth rates in the area under paddy, wheat, maize, and millet cultivation during the Sixth Plan grew at 7.07%, 5.28%, 7.28%, and 3.35% respectively. While such increases in cropped area led to consequent increases in overall production, a look at the estimated yield of cereal crops (see **figure 4**) reveals that the productivity of the land had not changed and declined quite drastically in the case of maize (-3.34% annually between 1980-1985).

A reason for this decline in maize yield (almost half a ton/hectare) can be attributed to the marginal land that it was being grown on. Farmers faced with a desperate food security situation were forced to clear even the most marginal lands, such as steep slopes and upland areas, to try to gain as much production as they possibly could. This was done without concern for the long-term environmental consequences and led to the marginal yields.

Therefore, the Seventh Plan (1985-1990) tried to address the environmental problems that were

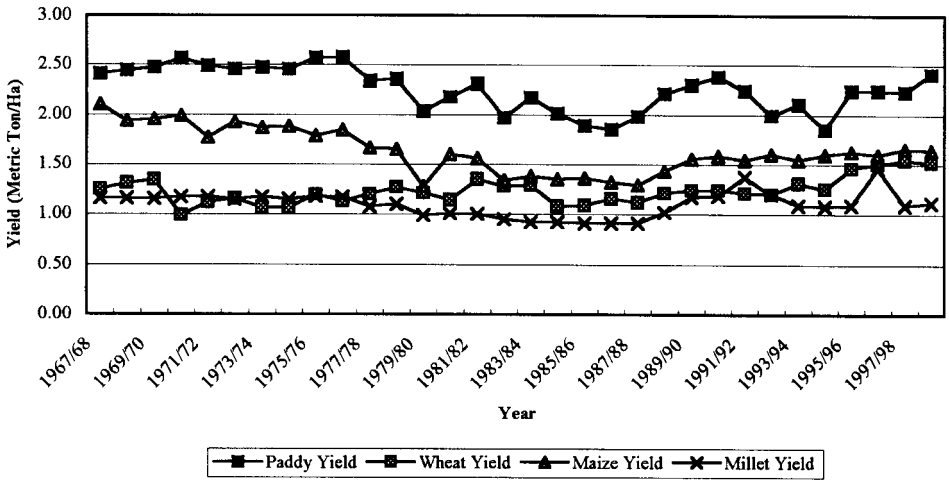

Figure 4: Estimated Yield of Selected Cereal Crops in Hill Region (1967-1998)

occurring due to the clearing of land for agriculture, while still trying to maintain the objective of increasing agricultural production. As Basnyat (1995, 240) notes, "attempts were made to stabilize agriculture and the natural resource base and promote local and regional self sufficiency in food production and other essential commodities in the hills." Despite these efforts, the area of cereal crops continued to grow especially for wheat, maize, and millet, which grew at annual rates of 5.32%, 4.25%, and 6.18 % respectively.

This idea of keeping a proper balance between land, forests, and farming households was also continued in the Eighth Plan (1992-1997), but a fundamental change in the method of achieving this occurred. A multi-party system of democracy was established in Nepal[2] and the new direction taken by the Government was one of liberalization of the economy and decentralization of power. The Government shifted its focus to the provision of physical infrastructure and social services, while leaving the development of the economy to the private sector. The Eighth Plan realized that "although food security is an important aspect of agricultural development, it is equally important to build capacity to buy food grain available on the market…agriculture needs diversification and commercialization to raise income and employment opportunities of farmers by identifying high value, low weight crops which have a comparative advantage." (National Planning Commission, 1992) This liberalization was also accompanied with the decentralization of power, thus shifting "from a 'top down' approach with heavy government involvement, to a more participatory approach where people would have a key role in making decisions affecting their day-to-day life." (Basnyat, 1995, 38-39)

The Ninth Plan (1997-2002) has shifted the focus of the Government to poverty alleviation while continuing the path of decentralization and liberalization. With this in mind, the development of human resources has become an important goal in order to enable local institutions to have a more leadership role. In keeping with the idea of supporting physical infrastructure, the Plan calls for the supporting of "small irrigation schemes, chemical fertilizer, rural roads and electrification, agricultural technology as production input and high value horticultural products, intensive crop farming, increased livestock productivity with improved animal feed and animal health, the development of agro-business and the provision of community and lease-hold forest." (National Planning Commission, 1998, 88) Since the Ninth

Plan is still ongoing, the successfulness of its implementation is yet to be known.

This section has tried to briefly outline the development of farming in the hill region of Nepal by looking at how the various policies have affected the area and yield of cereal crops. While the Government has tried to increase production of cereal crops, poor yields have meant that any gains in production that have been made have been due to increases of area under cultivation. This is troublesome trend due to the fragile nature of the environment in the hill region. Since the implementation of the Eighth Plan, the Government has tried to focus its efforts on the diversification of agriculture through the promotion of cash crops so that farmers can earn money to meet their food deficits. The following sections will look at development of farming in Ilam District, which is experiencing a shift from subsistence to cash crop farming, to see how farmers are benefiting and also the problems that they are facing in attaining food security.

4. Development of Farming in Ilam District

Ilam District is located in the easternmost part of Nepal bordering the Darjeeling District of West Bengal, India. (see **figure 5**) The District is comprised of forty-seven Village Development Committees (VDCs), forty of which are accessible by roads but many of these can only be used during the dry months of the winter. Farming is highly dependent on the monsoon rains, which falls between June and September, for its agricultural production. Only 13% of farmland is irrigated[3] while the remaining 87% are rain-fed. (Sharma, 1997)

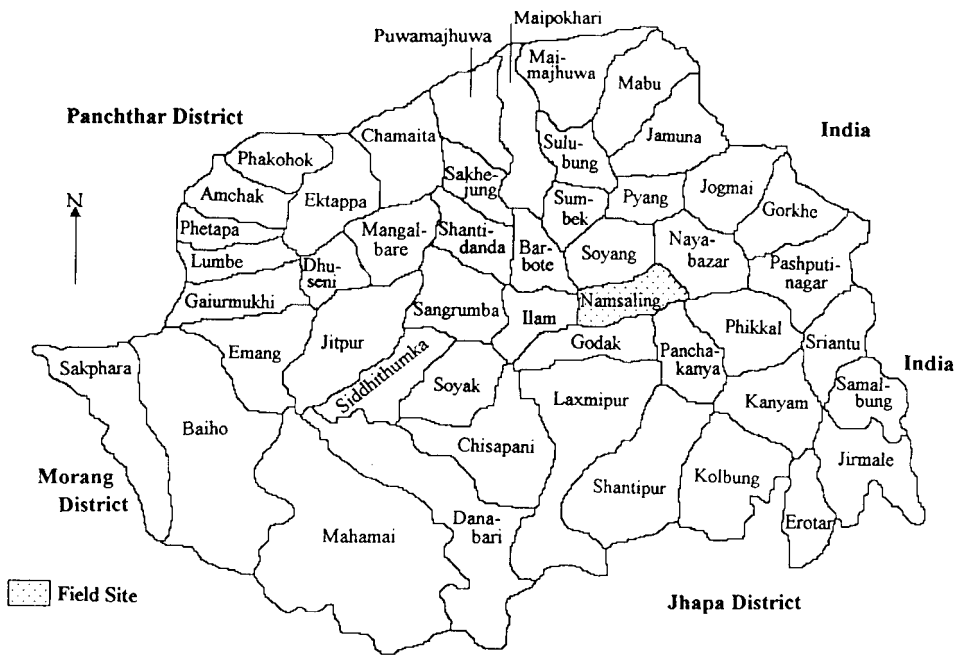

Figure 5: Map of Village Development Committee's (VDCs) in Ilam District

Ilam Bazaar, located in the middle of the District at an altitude of 1200m, is the district headquarters and only municipal town with a population 13,197 (1991). The spread of cash crop production, especially since the late 1980s, has helped to increase the economic activity in this area. Even between the time of the first field visit in late 1999 and second visit in early 2001, the increase in the number of stores, restaurants and hotels in the Ilam bazaar area was noticeable.

Historically, Ilam District was a part of the Limbuan, or country of the Limbus, who are just one of the many ethnic groups found in Nepal.[4] The land tenure system[5] practiced by the Limbus, called *kipat*, was a form of communal landownership with the *subba* or chieftain having absolute power over the land.[6] (Caplan, 1970) Population pressures felt in the Eastern Hill region was not solely due to the numbers of people but that "a few people controlled a large portion of the land resources and most of the people had to survive on the basis of the little cultivable land available to them. As forests were controlled by the *subba* and *thari*, it was not possible to expand agricultural land by clearing forests in the hills." (Dahal, 1994, 17). Dahal (1994, 18) also notes that the process of deforestation only accelerated after the 1960s due to the weakness of the Private Forest Nationalization Act in 1957 to control cutting, the relative inaccessibility of Ilam until 1960 which prevented commercial logging, and malpractices of loggers and forestry staff.

Looking at the population census data, Ilam District has experienced low population growth during the 1960s; this has increased quite markedly to 2.5% annually during the 1970s and 1980s. (**table 2**)

Table 2: Selected Demographic Figures for Ilam District (1961-1991)

	Ilam
1. Population Census	
1961	124,525
1971	139,538
1981	178,356
1991	229,214
2. Growth Rates (%)	
1961-1971	1.1
1971-1981	2.5
1981-1991	2.5
3. Average Household Size	
1991	5.5
4. Population Density	
1981	104.7
1991	134.6

Source: CBS 1987 and 1991.
Note: This table was taken from Dahal (1994, 28) but the figures for the year 1961 have been added by the author.

As mentioned earlier, while the presence of *kipat* land had forced some people to farm small plots of land or leave for other areas to earn a living, it had also helped to preserve forests because land could not be cleared without the permission of the *subba*. Thus land clearing had a later start in Ilam in comparison to other areas, which did not have such a system. The effect of this is reflected in the growth rate of land clearing for cereal crops seen in **figure 6**. As was discussed earlier, during the period of the Fourth

Plan (1970-75), the growth rate of area under cereal crop cultivation was low in the hills as a whole. In Ilam District, however, the growth rates were extremely high. The areas of paddy, wheat, maize, and millet grew at phenomenal annual rates of 13.56%, 16.12%, 7.06%, and 9.86%, respectively. However, despite this growth in area, the growth rates in the yield of cereal crops saw very little increases and were similar to that of the hills as a whole. (**Figure 7**)

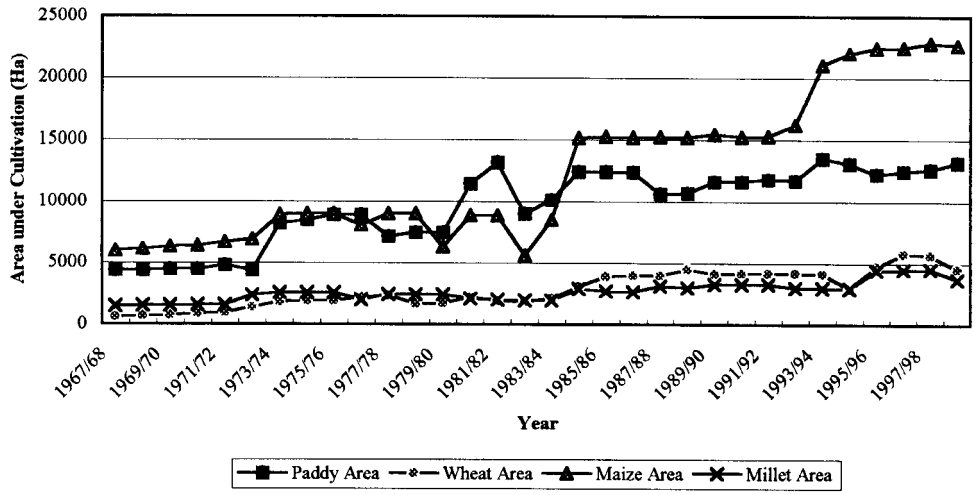

Figure 6: Estimated Area under Cultivation for Selected Cereal Crops in Ilam District (1967-1998)

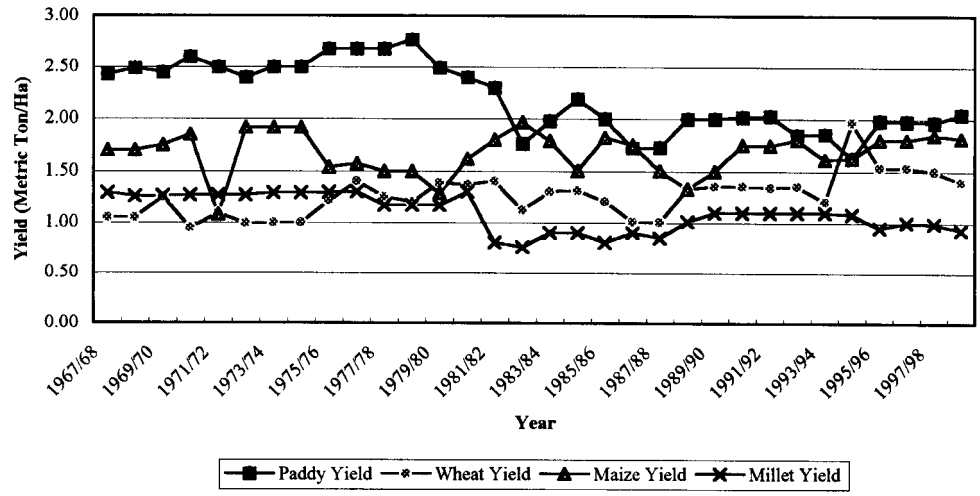

Figure 7: Estimated Area Yield of Selected Cereal Crops in Ilam District (1967-1998)

During the latter half of the 1970s, however, there was an actual decline in the area cultivated, which resulted in an overall decrease in production and yield. It was only until the start of the Sixth Plan (1980-85), which emphasized food sufficiency in the hills, that area under cultivation began to increase

again. From the mid-1980s to the start of the Eighth Plan there was a complete stagnation in the growth of area under cereal crop cultivation. This may be indicative of the fact that there was very little land left to cultivate but may also be a sign that the introduction of cash crops reduced the need to open more land.

A disturbing trend, however, is stagnating and declining yields for all cereal crops. An explanation for this might be that farmers were farming very marginal lands, which led to the decline in yields. In order to get an idea of how the availability of land has changed over time, the table below shows the landholding status of farmers in Ilam District for 1981 and 1991 and for Namsaling VDC in 1999.

Table 3: Landholding in Ilam District and Namsaling VDC

Land Holding Category	Ilam (1981)		Ilam (1991)		Namsaling VDC (1999)	
	Number	%	Number	%	Number	%
Holdings without land[1]	75	0.29	547	1.44	43	3.86
Under 0.1 ha			452	1.19	27	2.43
0.1 ha and under 0.2 ha	4,460[2]	17.36	1,308	3.45	42	3.77
0.2 ha and under 0.5 ha			6,872	18.14	224	20.13
0.5 ha and under 1 ha	3,553	13.83	10,486	27.68	334	30.01
1 ha and under 2 ha	6,161	23.99	10,201	26.93	287	25.79
2 ha and under 3 ha	4,286	16.69	4,423	11.68	109	9.79
3 ha and under 4 ha	2,615	10.18	1,926	5.08	30	2.70
4 ha and under 5 ha	1,844	7.18	832	2.2	11	0.99
5 ha and under 10 ha	2,373	9.24	594	1.57	5	0.45
10 ha and over	317	1.23	238	0.63	1	0.09
Total	25,684	100	37,879	100	1,113	100

Note: 1) Holdings having area under crops less than 0.01355 ha (8 Dhurs) in Terai or 0.01272 ha (4 Aanas) in the Hilly and Mountain region, but raising at least two productive animals or 20 poultry birds are included in the category "Holdings without land" ; Data for Namsaling also includes a "holdings without land and animals" category overlooked by the census.
2) The 1981 census uses a slightly different categorization for land holdings. The "under 0.1ha" to the "0.2 and under 0.5 ha" categories were introduced during the 1991 census, while the 1981 census had these land holding groups combined into one category. This table utlizes the land holding categories of the 1991 census
Source: CBS (1985, 1993) and Field Survey 1999, 2001

If it is assumed that the figures for the study village are representative of the District, the population pressures on land are quite evident. The landholding data clearly shows that since the 1980s, the percentage of people living on small plots of land has increased over the last two decades. For example, looking at the percentage of people who have less than 0.5 ha of land, the numbers have increased from 17.65% in 1981 to 24.22% and 30.19% in 1991 and 1999 respectively. With such a trend, it is obvious that farmers relying on subsistence farming will face difficulties in meeting their food needs

5. Cash Crop Farming in Ilam District

Despite these pressures on the land, the growth in the popularity of cash crops has allowed farmers to earn money in order to buy food and other necessities of life and thus increase their ability to achieve food security. The changes that are occurring in this District are therefore in line with the Government policies of the Eighth and Ninth Plans of trying to diversify and commercialize agriculture to increase incomes. It is important to note, however, that cash crops were introduced prior to the changes in

Government policies. Thus the pioneering nature of Ilam District makes it an interesting and important one to study.

Prior to the building of a road linking Ilam to Jhapa in the terai in the 1960s, Namsaling was an important center located along the trade route connecting Ilam bazaar to India. Interviews conducted with the people of Namsaling found that many farmers felt that their life had improved ever since the introduction of cash crops in the late 1980s. This roughly coincides with the paving of the main road linking Ilam to Jhapa, which has improved communication links, especially during the monsoon season, allowing for easier movement of goods to the terai and India

While the blacktopping of the road may have been the big turning point in allowing for farmers to have better access to markets for their cash crops, it is important to understand that the roots for this change were developed many years before that. Ilam District, being located next to the world-renowned tea growing area of Darjeeling, India, is well known in Nepal for its tea[7] cultivation. In fact, Pashputinagar, located along the Indian border (see figure 5), is only 15 km away from Darjeeling. Tea was introduced into Ilam in the 1860s and the close links that the Ilamese have with Darjeeling have benefited them in terms of education and awareness. During the time the British controlled India, missionaries had built up a good educational structure in Darjeeling. Many people of Ilam have family living in Darjeeling and there has always been frequent and unrestricted movement of people across the border. Over the years, the people of Ilam were exposed to education, living styles and, most importantly, made aware of the development options and possibilities. (Sharma, 1997)

Another reason why Ilam has been able to expand its cash crop farming is due to its geographical proximity to the terai and Indian cities. They provide outlets for a variety of cash crops grown in the district. Birtamod, a rapidly growing urban centre in Jhapa, 55km from Ilam Bazaar, is a key trading location from where the products are distributed to other commercial centers in Nepal and India. Silguri, 85 km from Ilam Bazaar, is a vibrant commercial city in Darjeeling District, which is rapidly becoming the principal commercial center for northeastern India.

5.1 Types of Cash Crops Grown

In Ilam there are many types of cereal and cash crops being grown. Table 4 shows some of the main crops being grown in Ilam along with their area of cultivation, yield, and market prices. As can be seen from the table, cereal crops of paddy, wheat, maize, and millet make up a large portion of the total cultivated area. Despite the fact that the cash crops shown above constitute a relatively small portion of cultivated land, they have a high value per hectare of land in comparison to cereal crops. It is this high value that is helping farmers to purchase food and thus improve their food security status.

Some of the cash crops being grown in Ilam are also having a positive impact upon the environment. Tea, for example, can be grown on marginal lands and since only the leaves of the tea plant are picked, the plant acts as an excellent soil stabilizer. Broomgrass is another popular crop that has positive environmental features. This grass was originally planted for fodder purposes but can also be used for fuel wood and roofing material. The part of the grass that is used to make brooms can also earn farmers a cash income. In terms of the environmental benefits, it has a deep root system and thus helps to stabilize the soil. The fact that it grows well on marginal land, such as bunds and ridges of farm terraces, means that it does not compete for land with cereal crops, though some farmers have allocated cereal lands for its cultivation. With a big market for broom in both Nepal and India, broomgrass has become an important income source for farmers.

Table 4: Main Crops, Area of Cultivation, Yield, and Market Prices in Ilam District

Crops	Area (Ha)	%	Yield in MT/ha	Market Price (NRs/Kg)
Paddy	17,252	24	1.95	21
Wheat	4,730	7	2.36	15
Maize	31,450	44	2.19	15
Millet	4,025	6	1.08	15
Tea	1,452	2	0.78	700
Potatoes	5,585	8	9.85	10
Ginger	950	1	14.68	23
Cardamom	2,980	4	1	350
Broomgrass	300	0.4	6	10
Sericulture	150	0.2	0.53	
Vegetable	2,158	3.4	3.3	

Source: District Agricultural Office, Ilam 1996
Note: This table was taken from Sharma (1998, 7); Market prices are for July 2000.

Cardamom is one of the oldest commercial crops in Ilam district and has been undertaken as an enterprise for more than 3 decades. (Sharma, 1997) Cardamom can grow well in agriculturally unsuitable gullies, shady, and moist lands that can be found throughout Ilam. In fact, the need for shade has also induced the plantation of trees, which help to further stabilize soil and also provides a source of fodder for animals. Due to its water and shade requirements, cardamom can only be grown in certain areas of the VDC but farmers who are fortunate enough to own such land are fond of this crop because it requires very little care and labor once planted and receives a very high price on the market.

Finally, in terms of positive environmental effects, sericulture has been recently introduced into Ilam due to the ideal climatic conditions for this type of farming. The mulberry bushes that are needed to feed the silkworms are also an excellent soil stabilizer since they can be grown on steep slopes and ridges of terraces. The bushes can also be used as a source of fodder for livestock and fuel wood for household purposes. While it is still too early to determine the successfulness of this endeavor, sericulture does have good potential in stimulating the economy and creating jobs.

5.2 Consequences of Cash Crops on Farming in Namsaling

In order to examine the farming situation in Ilam, Namsaling VDC was chosen as a field site due to its location along the former trade route to India. A general survey of all households was conducted in order to obtain basic demographic, educational, occupational, and economic data. A detailed sample survey of sixty-one households was also conducted to provide a better understanding of the costs and outputs associated with each of the components of the farming system. A food sufficiency survey was also conducted of 251 households whereby farmers were asked how many months they were food sufficient from the production of cereal crops from their own land. This section will attempt to analyze some of this data, with a particular focus on the effects that cash crops have on farming households.

5.2.1 Production and Income from Crop Cultivation

The first important thing that needs to be examined when studying the farming situation of a village is to see the types of crops grown, the proportion of farmers growing them, and the overall production levels. Table 5 attempts to do this by looking at the production of crops in terms of their purpose, i.e., self-consumption and sale.

Table 5: Production of Crops by Purpose in Namsaling VDC

Crop[1]	Self-consumption				Sale				Total[2]	
	No. HH	% of HH	Production (Kg)	%	No. HH	% of HH	Production (Kg)	%	No. HH	Production (Kg)
Paddy	50	98	42,203	90.9	5	9.8	4,200	9.1	51	46,403
Maize	59	98.3	41,418	93.4	8	13.3	2,939	6.6	60	44,356
Wheat	37	94.9	5,152	85.6	6	15.4	868	14.4	39	6,020
Buck wheat	32	69.6	4,406	61	16	34.8	2,812	39	46	7,218
Other cereals[3]	3	100	230	100	0	0	0	0	3	230
Banana[4]	14	82.4	2,350	72.9	4	23.5	875	27.1	17	3,225
Cardamom	3	17.6	78	1.9	17	100	4,032	98.1	17	4,109
Dal/beans	33	94.3	941	47.8	12	34.3	1,029	52.5	35	1,969
Garlic	21	95.5	180	80.7	4	18.2	43	19.3	22	223
Ginger	17	39.5	3,296	18.7	31	72.1	14,285	81.3	43	17,581
Green veg.	33	100	1,236	91.7	2	6.1	112	8.3	33	1,348
Mustard	34	100	1,448	97	1	2.9	44	3	34	1,492
Potato	37	94.9	8,795	66.2	11	28.2	4,498	33.8	39	13,293
Red chili	31	93.9	193	80.1	4	12.1	48	19.9	33	241
Other crops[5]	37	88.1	1,611	93.8	5	11.9	106	6.2	42	1,717
Total	441	85.8	113,537	76.0	126	24.5	35,890	24.0	514	149,426

Source: Field Survey 1999 Sample size＝61

Note: [1]The scientific names of the crops can be found in the appendix.

[2]The number of households do not add up because many households grow crops for both self-consumption and sale purposes.

[3]Other cereals includes millet and barley.

[4]The units for banana are in pieces, not in kilograms. For example, the self-consumed production is not 2,350 kg but 2,350 bananas.

[5]Other crops include citrus fruit, herbal medicine, honey, jute/tobacco, other fruits, peanuts, roots/tubers, silk, soyabean, sugarcane, tea/coffee.

As can be seen from this table, the cereal crops are grown mostly for self-consumption or subsistence purposes. Farmers, however, sell about 40% of the buckwheat production to earn cash income. The other major crops are for the most part grown for subsistence needs. Any surplus production that a farmer produces typically gets sold on the market. Dal/beans and potato also see a fair amount of their production sold due to the fact that they are both integral parts of the Nepalese diet. Approximately 27% of bananas grown in Namsaling are sold. The perishable nature of this crop means that any production farmers cannot consume by themselves is sold on the market to earn cash income. Spices such as garlic and red chili see about 20% of their production sold.

The main cash crops[8] that can be found in Namsaling are cardamom and ginger, which have 98% and 81% of their total production sold, respectively. Ginger is one of the most preferred crops of farmers given the fact that it can be grown throughout the village[9]. One problem with this crop is that it is a high nutrient requiring crop and thus has a tendency to exhaust the soil. Since the use of chemical fertilizers is limited, heavy manuring is required for its cultivation and the long-term effect that this crop will have on the soil is something that requires further study.

Cardamom is grown solely for cash income purposes with only 2% of its production being kept for self-consumption. Despite the fact that cardamom can only be grown in certain regions of the village, it is a preferred crop of farmers due to its high price and low labour requirements. A problem currently

facing both cardamom and ginger is that of diseases which are reducing their productivity. During the first field visit, farmers were complaining of a disease known as *jujure* that had hit the cardamom crop. In the most recent field visit, it was found that ginger farmers were also facing a disease, which they called *pahele*. The problem is not so much the diseases themselves, but the lack of knowledge about the type of diseases and measures that need to be taken to combat and prevent them from occurring in the future.[10]

While the examination of the overall production of various crops helps to provide a picture of the farming situation of a village, the importance of crops to the livelihood of farmers is best judged by looking at the income they create for farmers. Table 6 shows the contributions of crops to the total income earned from crop cultivations in Namsaling.

Table 6: Income Earned from Crop Cultivation for Namsaling VDC (NRs.)

Crop	Self-consumption			Sale			Total		
	Avg. income	Total income	%	Avg. income	Total income	%	Avg. income	Total income	%
Paddy	8,441	422,034	90.9	8,400	42,000	9.1	9,099	464,034	100.0
Maize	8,115	54,092	85.6	4,246	9,117	14.4	8,546	63,210	100.0
Wheat	1,462	478,790	93.4	1,520	33,970	6.6	1,621	512,760	100.0
Other Cereals	41	41	100.0	0	0	0.0	41	41	100.0
Banana	196	2,350	72.9	219	875	27.1	215	3,225	100.0
Cardamom	6,935	20,804	1.9	63,540	1,080,188	98.1	64,764	1,100,992	100.0
Dal/beans	917	29,344	47.8	2,675	32,097	52.2	1,862	61,440	100.0
Garlic	308	6,470	80.7	386	1,543	19.3	364	8,013	100.0
Ginger	2,698	43,171	18.7	6,037	187,136	81.3	5,617	230,307	100.0
Mustard	1,245	39,824	97.3	1,102	1,102	2.7	1,279	40,926	100.0
Potato	1,876	69,394	66.2	3,226	35,486	33.8	2,689	104,880	100.0
Red chili	608	18,227	80.1	1,133	4,533	19.9	711	22,760	100.0
Avg. Income per Household	19,419		45.3	23,411		54.7	42,829		100.0
Avg. Income per crop	3,590			13,865			6,839		

Source: Field Survey (1999) Sample size＝61 households

Note: 1) Buckwheat, green vegetables, and other crops have been left out of the income calculations due to difficulties in converting weights to kg and lack of reliable market price data

2) Income has been calculated by utilizing the 1997-98 average yearly market prices for Ilam district.

Looking at the total average incomes earned from each crop, the importance of paddy and maize to the overall income of farmers can be seen by the fact that these crops both earn average incomes that are higher than the total average income per crop of NRs. 6,839. Given the popularity of ginger as a cash crop, the average income earned from ginger cultivation was rather low, earning only NRs. 5,617. The lower than average income earned from ginger cultivation can in part be explained by fluctuations in the market prices. For example, the incomes from table 6 were calculated utilizing the 1997-98 average yearly market price in Ilam district, which stood at NRs. 13.10/kg. The average yearly market price in Ilam for ginger in 1996-97, however, was NRs. 20.14/kg. Such fluctuations in prices are a common occurrence, creating some insecurity in the ability of cash crops to provide a steady income.

A second feature that is noticeable from table 6 is the average income earned from cardamom, which

is almost ten times the total average. The effect that this crop has upon the income of farmers can be seen when comparing the total percentage of production sold in table 5 and the total cash income earned from farming in table 6. In table 5, only 24% of the total crop production was sold on the market. At the same time, however, this production constituted 55% of total income earned from crop production. If one were to remove the income of cardamom from table 6, cash income earned from sale of crops would decline to 23% of total income. This difference shows the degree to which cash crops are contributing to farming incomes in Namsaling.

5.2.2 Food Sufficiency

Another important factor that one needs to examine when looking at the farming situation of a village, is the food sufficiency of farmers, i.e., the number of months farmers can feed themselves from the cereal crops produced on their land. The table below utilizes food sufficiency data collected by the Namsaling Community Development Centre (NCDC), a local NGO, in 1996 and compares these figures with those collected in a field survey conducted in 2001 to see the changes that have occurred in the past five years.

Table 7: Food Sufficiency in Months for Namsaling VDC

Year	Food Sufficiency					
	0 to 6 Months		7 to 12 Months		Total	
	No. of HH	%	No. of HH	%	No. of HH	%
1996	594	60.4	390	39.6	984	100.0
2001	138	63.9	78	36.1	216	100.0

Source: NCDC (1996) and Field Survey 2001

As can be seen from this table, the percentage of households that are food sufficient for less than six months has increased by 3.5% in the past five years. Such decreases in food sufficiency are understandable when one considers the fact that some crops, such as ginger, compete with cereal crops for land. Thus when the ginger crop is planted, cereal crops cannot be grown on that land and this can lead to decreases in food sufficiency levels from cash crop production.

One advantage that farmers in Ilam have lies in the fact that cash crops such as cardamom and broomgrass can be grown without sacrificing cereal crop production; cardamom typically grows in regions that are not suitable for cereal crop cultivation and broomgrass can be grown along terrace bunds. These crops are therefore excellent activities to supplement farmers subsistence farming activities and any extra income that farmers can earn will help them to meet their food security needs. At the same time, the positive environmental aspects of these cash crops can help to halt the problems associated with land degradation of fragile mountain environments.

5.2.3 Problems Facing Farming

There are, however, various hurdles that still need to be overcome in order for cash crop farming to help farmers attain food security. As was noted in the first half of the paper, the Government of Nepal has instituted a wide range of policies to try to increase cereal crop production, but production increases in the hill region were only due to increases in area cultivated and that the productivity of land had not changed and actually declined in the case of Ilam District. One of the reasons that could account for this is the inadequacy of extension services available to the farmers, which was a problem that was noticed

in the study village. The introduction of cash crops into Namsaling was for the most part due to the efforts of the farmers as opposed to promotion by government agricultural extension workers. An interview with a long-time farmer revealed that the source of the ideas for growing cash crops came from travels villagers made to India and other parts of Nepal. By seeing what people in other areas were doing, farmers experimented in their own fields and if they found it to be viable, extended it to a greater area.

The problem in extension services has been something that has existed for a long time. Difficulties in accessing villages and lack of manpower to carry out extension activities have helped to hamper improvements in productivity of land. As Basnyat (1995, 36) notes,

> the goals of meeting production targets for extension has encouraged it to deviate from its main task of educating and facilitating the efforts of farmers…extension programs too often appear to be aimed at meeting certain preordained quantitative targets such as number of trials, demonstrations, tours, trips and training sessions without regard to their impact on agricultural production.

At the same time, there tends to be a lack of coordination among the various ministries and departments. These institutions have their own set of programs that are funded by foreign aid but the lack of communication between various services has led to "an approach towards hill farm development that is fragmented and does not take into account the integrated nature of all the necessary components of hill farming systems. (Abington 1992)." (Basnyat 1995, 34)

While the policy goals stipulated in the Eighth and Ninth Plans seem to be headed in the right direction in terms of trying to involve people at the local level in the decision-making processes it should be noted that Nepal has had a long history of top-down decision making and the changing of the way institutions work and people's thinking is something that cannot happen overnight. Also, in order for local people to be able to participate in a meaningful way and help to influence policy decisions, there is a need for heightened awareness levels. In this sense, Ilam District as a whole is fortunate to have a relatively high rate of literacy.[11] In fact, Namsaling is home to one of the first secondary schools built in Nepal and with an overall literacy rate of 66.7%. (Field survey 1999, 2001) Despite the comparative advantage that Namsaling has in terms of education levels and NGO activities, problems were still seen in the lack of access farmers had to various agricultural extension services.

A third problem is the volatility of the prices of cash crops. Although merchants play an important role in buying agricultural produce from the farmers and getting them to markets in Nepal and India, the prices are vulnerable to the whims of the markets. As was seen in table 6, the average income earned was rather low for ginger due to the low market price of 1997-98. The creation of marketing cooperatives or similar types of institutions is needed to organize the farmers and create some stability in the prices that farmers receive for their goods.

6. Conclusion

This paper has outlined the problems that have faced agriculture in the hill region of Nepal. While the policies of the Nepalese government have tried to boost the production of cereal crops, any gains in production have largely been due to increases in area under cultivation and the yields have stagnated for the past thirty years. Due to the subsistence nature of agriculture in Nepal, the clearing of new lands has

come at the price of cutting forests and thus brought an imbalance to the agricultural system. Environmental degradation is particularly acute in the hill region due to the fragile nature of mountain environments.

Since the 1990s, the government has embarked upon a process of liberalization and decentralization. The strategy now being taken by the Nepalese government is to promote the production of cash crops in order to enable farmers to buy grains to meet their food sufficiency needs. In doing so, it is hoped that this will also halt the environmental degradation occurring in the hills due to the clearing of land for cereal crops. Also, the policy goal of decentralization is to try to involve the local people in the decision-making processes and bring about development from the bottom-up.

Ilam District was used as a case study as it is undergoing the transition from subsistence to cash crop farming. Some of the crops being grown had beneficial effects on the environment in terms of promoting vegetation coverage. Looking at village level data, it was found that the production of paddy and maize was still a very important part of farmer's incomes. While 24% of crop production was sold on the market, this production contributed to 55% of total income indicating the large role that cash crops can play in improving the income of villagers. It was also found that food sufficiency from cereal crop farming had decreased 3.5% over the past five years. The growing of cash crops that do not compete for land with cereal crops can help to keep food sufficiency levels stable while providing extra income with which to procure food.

The problems associated with the provision of agricultural extension services to farmers have plagued Nepal for many years. These problems still have to be overcome if farmers are to be able to make a success out of cash crop farming. Most of the cash crops being grown in the research village came from the efforts of farmers themselves. Problems with diseases have also brought about losses in production and highly volatile market prices make the future uncertain for farmers. Effective dissemination of information pertaining to the proper techniques of growing different cash crops as well as what crops grow best in the various climates of the village are needed. The development of better marketing institutions are also needed to try and bring stability to prices farmers receive for crops and thus hope to make this form of hill farming sustainable into the future.

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Endnotes

[1] It should be noted that the terai was not totally inhabited prior to the malaria eradication program. The indigenous people of the terai, known as the Tharu, have been able to live in this region due to their natural immunity to malaria.

[2] The political turmoil caused by this change accounts for the delay in implementing the Eighth Plan

[3] This figure includes those irrigation schemes, that are only active during the rainy season.

[4] The Lapchas are known to be the first inhabitants of the Ilam region. It is thought that the Limbus who came afterward drove out or intermarried with the Lapchas. Today, there are only a few people of Lapcha descent left in Ilam. For more information see Schwerzel, Tuinstra and Vidya (2000) The Lapcha of Nepal, Kathmandu: Udaya Books.

[5] Other than kipat, there are other forms of land tenure in Nepal. These include *raikar* (form of state ownership), *guthi* (lands used for temples and charities), and *birta* (Land given to priests, nobility, and military officers). For more information see Regmi, M.C. (1978) Land Tenure and Taxation in Nepal, Kathmandu, Ratna Pustak Bhandar.

[6] The Kipat system of land tenure was abolished in 1968.

[7] The scientific names for the crops in this paper have been provided in the appendix.

[8] Data for broomgrass was not picked up in the sample survey due to the fact that it is not an edible crop. There are also difficulties associated with estimating the area of production thus further study will be required to collect data specifically for this crop.

[9] In a study conducted by NCDC, farmers ranked ginger, broomgrass, and cardamom as their most favored crops to grow, respectively.

[10] Despite efforts to find out the exact nature of the diseases, the lack of pathological testing facilities in the region have made it difficult for the local people to find out causes of the diseases.

[11] ICIMOD (1997) in its study of the various Districts of Nepal has found that Ilam has the eighth highest rate of literacy at 52.35%.

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Appendix

Scientific Names of Crops Found in Ilam

Crop name	Scientific Name
Paddy	*Oryza sativa* L.
Wheat	*Triticum aestivum* L.
Maize	*Zea mays* L.
Millet	*Eleusine coracana* (L.) Gaertn.
Barley	*Hordeum vulgare* L.
Buck wheat	*Fagopyrum esculentum*
Banana	*Musa paradisiaca*
Broomgrass	*Thysanolaena maxima*
Cardamom	*Amomum sublatum* Roxburgh
Garlic	*Allium sativum* L.
Ginger	*Zingiber officinale* Rosc.
Mustard	*Brassica rapa* L.
Potato	*Solanum tuberosum* L.
Soyabean	*Glycine max* (L.) Merr.
Sugarcane	*Saccharum officinarum* L.
Tea	*Camellia sinensis*

Source: Shrestha (1998)

数学教育分野における国際協力の考察
－ケニア国中等理数科教育強化プロジェクトを事例として－

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０．はじめに

日本ではさほど知られていないが，森総理のアフリカ歴訪中になされたアフリカ政策スピーチ「新世紀のアフリカと日本」（注１）は，サブサハラ諸国で極めて好意的に受け止められている．とりわけ「アフリカ問題の解決なくして21世紀の世界の安定と繁栄はない」というフレーズは，サブサハラ政府関係者が好んで言及するところとなったが，もし同じフレーズを欧米の国家元首が口にすれば，日本の総理ほどに共感を持って迎えられていたであろうか．ヨーロッパとアフリカの間には容易に払拭しきれない歴史的わだかまりが存在しており，そこにアフリカから遠く離れた極東の島国の発想と，南アフリカ・ムベキ大統領の次の政策スローガン（注１）とが，共鳴する根拠が隠されているように思う．

《全ての人類は相互依存関係にあり，全ての者が自由でない限り誰も真に自由ではあり得ない．世界の他の地で飢える者がなくならない限り誰も真の意味で豊かではあり得ない．全ての者が環境を護るために行動しない限り質の高い生活は保障されない．アフリカの低開発は世界の全ての人々の関心事でなくてはならない．アフリカ・ルネサンスの勝利はアフリカの人々の生活向上だけではなく人間の尊厳の領域を全ての人類に広げることを意味する．》

こうした歴史的・地理的背景の下に，アフリカは日本に教育協力を期待しており，また日本政府はそれを受けて，アフリカの教育協力に積極的支援を表明している．その嚆矢であるケニア国中等理数科教育強化プロジェクトは，教員研修を通して理科・数学分野の中等教育を質的に高めることを目標としている．本稿ではケニアで実施されているプロジェクトにおける，数学分野の国際協力活動の実際を報告する．またそこから得られた知見として，数学教育における国際協力研究の今後の課題を最後に述べる．

１．教育分野における国際協力の新しい動向

教育分野において国際協力が始まるのは，1960年前後と考えてよい．途上国における教育の量的拡充を図る会議が，UNESCOの主導の下，アジア，アフリカ，ラテンアメリカの各地域ごとに開催されている．新生の独立諸国が，近代教育制度を自国に構築すべく，カラチ（1959），アヂスアベバ（1961），サンチアゴ（1961）に集まり，カラチ計画（1961），アヂスアベバ計画（1961），サンチアゴ計画（1962）を策定した．

その結果，教育の量的普及に一定の成果が得られるものの，教育の国際支援は必ずしも初等教育の完全普及（Universal Primary Education）を実現

する方向になく，経済開発を一義とする人的資本論に依拠する展開であった，と考えられる．換言すれば，その教育開発の根底には技術移転とトリックルダウン（自動的波及）が前提とされていた．要するに科学技術や経済開発に直結する高度の「技術移転」を実現すべく，高等教育あるいは職業・技術教育に重きを置く援助政策が取られ，その効果は初等教育レベルにまで自動的に波及すると考えられていた．皮肉なことに波及したのは，国内外の貧富の格差であった．

「自動的波及」は，見方を変えれば，途上国という国民国家の根幹に抵触しないための方便ともいえ，したがってその視野には，本来的に基礎教育は収められてはいない．ところが開発の持続可能性やそこから生まれる価値の公益性を確保し確実なものにするには，全体的な教育水準の底上げが不可欠であろう．国際協力事業団が指摘するように，《経済開発のための「人的資源の開発」から，人材育成だけでなく一人一人を尊重する「人間開発」という視点が重視される》（1994,p.1）という，教育の質が問題にされるのは，一つの歴史的必然であったといえよう．

こうした思想が実効性を備えた政策提言として実を結ぶのは，失われた10年と一般に呼ばれる1980年代における教育の量的普及の停滞，質的低下という深刻な事態を経てからのことである．肥大化した公共部門のスリム化や市場経済原理の導入などを求めた構造調整政策を強力に推進する中で，教育分野でも経済的効果が明らかでない部分へ負の影響が及び，ようやくその重要性を認めることができたのである．

そのような中，「国際識字年」とも呼ばれた1990年，４つの国際機関（世界銀行，国連開発計画，UNICEF，UNESCO）により，世界教育会議がタイ・ジョムティエンで共催された．そこでは，30年前と同様に基礎教育を取り上げるものの，思想的背景は異なり社会的・経済的発展よりも世界人権宣言（1947）と同じ精神で，教育を個人の権利として捉えている．会議の成果は，「万人のための世界教育宣言（EFA）」として採択され，実効性の伴う政策課題に位置付けられ，その後の教育協力の方向に大きな影響を及ぼすことになる．

EFAには，従来の《援助国による特定の人々への教育協力，そして当該国によるその普及》という考えから，各人の教育を受ける権利の確保を射程に入れ，質の高い教育の普及を目指して，《当該国による制度の構築とその実施能力の涵養，そしてそれに対する援助国による協力》という考えへと，変化を見ることができる．教員の低い資質，低い就学率，性別，地域別，貧富における格差などの問題に取り組み，宣言に盛り込まれた質の高い教育の普及を図っていくには，ダカール行動枠組み（UNESCO, 2000）に再び触れられているように，行動への強い責任が，協力する側とされる側の双方に求められる．

この強い責任の内実は，質の高い教育の普及を実現し，持続するための制度を確立するということに集約される．森岡他（1993）は，制度を，それぞれの時代，地域で一定のパターン化された日常を営むことができるよう，それぞれの生活場面で見られる行動様式の体系と捉え，それは静的な事態ではなく，長期的に見れば制度化と脱制度化という局面を持つと，特徴付けている．このような行動様式の体系である制度を個人から見れば，各々の行動を標準化することで，互いの行動を制御し意思決定の負担から解放し，次の行動様式を創出する素地を提供するという役割を担うことも，指摘している．

要するに，教育普及における制度には，社会や組織レベルでの形式的，経済的側面と個人レベルでの態度的，精神的側面が考えられる．前者は，普及をはかる学校や様々な教育施設の建設，教師の育成教育，教育制度全体を機能させる行政レベルでの法的整備などを指す．それに対し後者は，制度に関わる個人個人の精神面を指す．

そもそも制度は，社会的要因によって特定の行動を継続的，組織的に行う必要があってはじめて確立される．従って教育行政レベルが先行し強制的に規範で個人を縛る場合もあるが，制度が活力に富み持続するには，制度化の過程で個人によって特定の行動様式の必要性が十分に認知され，若しくは自らが働きかけることで，両者が相互に関係することが必須である．言い換えれば，前者だけでは「強制されるから，また経済的損得のために，参加する」に陥るし，後者だけでは雰囲気に左右されて流動的に終わってしまう可能性を持っ

ている．

本調査研究報告では，以上の新しい国際協力の流れを踏まえて，ケニア中等理数科教育強化プロジェクト，特に数学教育分野での活動について報告する．プロジェクトの目標は，教員研修制度の確立を通した教育の質的向上であり，そこには先述のように，中央や地方での研修における組織的側面と，それに参加する個々の教師の態度的側面がある．ところが基礎調査（Baseline Survey）の段階で，後者の個人レベルの態度的側面が特に重要であることが分かり，その点に重点をおいて研修を実施した．本報告においても，その特徴を十分に伝えたい．

２．ケニアの教育

はじめに，ケニアの教育が置かれている歴史的状況について述べる．なぜなら国際協力の中でも教育分野のそれは，没価値な技術移転ですまされる分野ではなく，当該国の伝統や文化と深く関係し，ケニア教育史の素描は，近代教育と伝統文化の関係についての背景を与える，と考えるからである．

19世紀後半，探検家達についで入ってきた多くのキリスト教関係者は20世紀に入ると独自に民衆の教育を展開した．植民地政府はこのような動きを組織化して，現在の教育制度の前身を形成していった．しかし独立前，学習指導要領はヨーロッパ人用，インド人用，アラブ人用，アフリカ人用に分けられており，アフリカ人のそれは労働力の生産という植民地政府の政策に沿うものであった．

長年の闘争の末1963年に独立を果たしたケニアでは，植民地政府によって押さえられていた中等教育の需要が上昇した．そこでケニヤッタ初代大統領は，ハランベー運動―1974年より授業料を無償にする一方で，村落共同体が労力を拠出し拠金することで，独自に学校を設立・運営する動き―を展開し，解決策を講じた．その影響の下，表１に見るように特に中等教育段階の量的拡充は独立後の約30年間において目を見張るものがあった．

同時に教育の質的側面においても様々な試みが行なわれた．数学教育では世界の最新の動きに乗り遅れまいと，1960年代から70年代にかけて新しい指導内容を取り入れた教育課程が展開された．それは数学教育の現代化運動と呼ばれ，集合や演算法則などの新しい概念を取り入れようとするものであった．しかし新しい内容に対する教師の側の準備不足が露呈し，大変な社会的混乱をもたらした．結局1980年に，政府は基本的な方針を変え，現代化運動の廃止を決定し，教育のケニア化－独自路線追求－を推進する．

表１　初等，中等学校数

	1963	1970	1980	1990
小学校数	6958	6123	10268	14864
中学校数	151	783	1785	2678

1985年に，教育制度はイギリス植民地時代から継承された７－４－２－３制から現在の８－４－４制に移行するが，その時までに自前のカリキュラム，教科書，試験を作成・実施する制度を確立してきた．つまりカリキュラムと教科書に関しては1967年に設立されたケニア教育研究所（KIE）が，初等教育（８年）を修了しただけでも就労に耐えるよう，応用・現実を重視したカリキュラム，併せてそれに準拠した教科書を作成した．試験制度に関しては，従来イギリスに依存していたり，ウガンダ，タンザニアとともに東アフリカ全体で試験を実施していたりしたが，1980年に設立されたケニア国立試験協議会（KNEC）が独自に中等教育修了試験を実施するようになった．しかし，新しい教育制度では科目数が増えたり，さらに技術系科目の導入にともない様々な機材を購入する必要が出て来たりして，財政を圧迫する大きな要因となり，現制度が批判される理由の一つとなっている．

新しい時代へ向けて，ケニア政府は現在，教育改革に取り組んでいる．しかし未だに旧制度への愛着は，多くの人に強く残っており，また同時に旧宗主国である英国を中心とする世界的教育ネットワークへ直接リンクする回帰的思考も，根強く残っている．これには幾つかの理由が考えられる．個人レベルでは，留学する際にカリキュラムの対応が問題になる．つまり新制度における中等教育修了までの年数は旧制度のそれと比較して一年短

く，その制度を修了した人が，英国留学する際に当該の教育制度に相当する内容を履修しているか，さらにそれに対応する学力を有するかどうかが問題とされる．

次に，学校レベルの問題として，ある意味での学力低下が挙げられる．旧制度において後期中等教育の２年間は選択性を取り，コースによって特定の科目を集中的に勉強していたが，一方，新制度では多くの科目を同時に履修する．そこで旧制度と比較すると，新制度では大学入学時点で特定の分野における生徒たちの力が十分に育っていないことが問題とされる．これら年数と科目数が教育制度に関する議論の中心をなしている．そこに政治的，経済的利益も微妙に絡んで，議論が複雑になり，将来像を描くのに苦心しているのが，今日のケニアの教育といえよう．

このような状況のもと，SMASSEプロジェクトでは，現在の枠組みの範囲で教育をいかに充実することができるのかを教師とともに考えている．つまり教育制度の問題は国家主権に関わり，プロジェクトがそこに直接関与できず，さらに，教育の年数や科目数がどのように変わろうとも，目前の子どもたちのために後述する生徒中心の学習を実現すること，並びにその中で教師の積極的姿勢が育まれることが，本プロジェクトの目標にとって最も重要との判断がある．

３．ケニア中等理数科教育強化プロジェクトに関わる活動

さてケニアが独立して既に37年が経過したが，ここまで量的拡大に先導される形で，教育改革が進められてきた．そして現在ケニア政府は，経済問題とも絡んで教育の質的側面の充実，独自性を模索していると言える．

このような歴史的文脈で，ケニア政府の要請を受けて中等理数科教育強化（Strengthening of Mathematics And Science in Secondary Education：SMASSE）プロジェクトが1998年に開始された．選ばれた９つのディストリクトにおいて，教員研修を通して理科教育（物理・化学・生物）と数学教育の改善を図ることを目指している．この目的

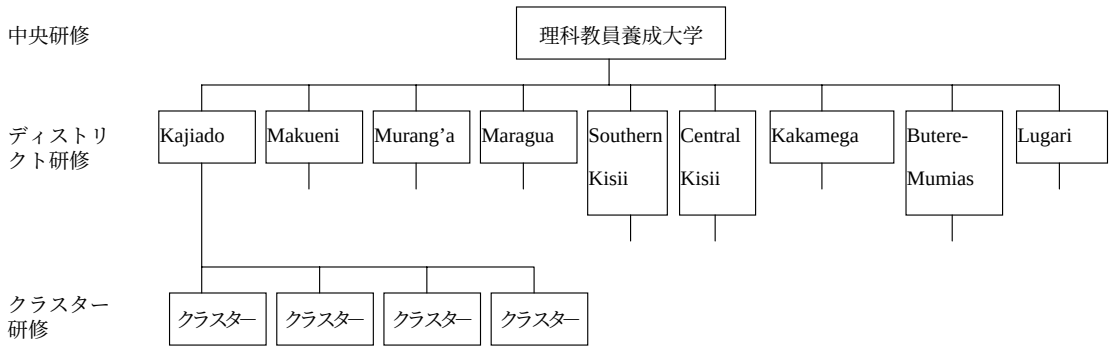


図１　カスケード方式研修

	1999				2000				2001				2002				2003			
	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
中央研修（8月）			◆				◆				◆				◆				◆	
ディストリクト研修（4月）						○				○				○				○		
クラスター研修																				

図２　研修サイクル図

を達成するために，カスケード方式（図１）を用い，中央，ディストリクト（日本の県に相当する教育行政区分），クラスター（市町村に相当する教育行政区分）という三段階で，中央研修は８月に２週間，ディストリクト研修は４月に２週間実施される（図２）．またクラスター段階では，出席者数も多いので各地域の事情に応じて研修の時期や方法を設定することとなった．教員研修制度の実施方法や時期などの形式的側面の概要は以上である．

研修制度が全体として機能するには，形式的側面が個人の態度的側面とうまく呼応する必要がある．そこで教育現場特に授業の実態を調べるために，プロジェクト第１年目の1998年に，質問紙，インタビュー，授業の参観を通して，基礎調査を行った．その中で，筆者（馬場）が参加した調査の内訳は，表２の通りである．

質問紙で得られた結果については既にKanja et al.（2001）に纏めたので，ここでは第２年目に実施した第１回中央研修に向けて中核となった事項を中心に，インタビュー，授業参観で得られた結果についてまとめる．尚，その全容は文末に追記として掲載する．また筆者が帰国して以降も，インタビュー，授業参観を若干実施しているが，その結果はここでの項目と重なっている．

教師はインタビューの中で，授業を成功させる秘訣として，授業中の数学的活動や生徒間の意見交換をあげる一方，授業がうまくいかない理由として，生徒の消極的な態度を筆頭に挙げていた．しかし参観した12の授業において，生徒に考え方を述べさせたり，生徒間で話し合わせたりする場面を見ることは皆無であった．

つまりインタビューで教師自身が答えていることと，実際参観した授業で教師のしていたことの間には，大きな隔たりがあった．これは一方で単なる教師の怠慢と見なすこともできるが，他方では生徒中心の授業を実現する教授方法やその重要性を研修において再認識することで，変わり得る可能性と見なすこともできる．事実1999年に実施された中央研修では，表３に掲げるプログラムで，この乖離に具体的な解決の方向性を持たせるよう取り組んだ．

表２　基礎調査の内訳

調査方法	調査対象	調査数
質問紙	４校，14クラス	280枚
インタビュー	校長	１名
	中学校数学教師	18名
	小学校教師	４名
	保護者	11名
	生徒	７クラス
授業見学	５校	11クラス

表３　第１回中央研修プログラム（数学科）

	研修プログラム活動	
	午前	午後
第１日目	開会式	SMASSEとASEI運動
第２日目	基礎調査の分析	ケニアにおける数学教育史
第３日目	数学教育における困難点	青年心理学
第４日目	試験と評価	理数科教育におけるジェンダー問題
第５日目	PDSIアプローチ（計画・実施・評価）	誤答分析
第６日目	教科書と学習指導要領の分析	数学教育における新傾向 授業ビデオの鑑賞
第７日目	数学教育の社会文化的側面：幾何	民族数学を使った授業計画 教材の作成
第８日目	オープン・エンド・アプローチの導入	オープン・エンド・アプローチを使った授業計画
第９日目	TIMSSビデオの鑑賞と議論	研修間計画の立案
第10日目	研修評価	閉会式

このプログラムに見られるように，研修は，ジェンダーや青年心理学のような教育一般に関する部分と数学教育の教科内容，教授法や問題点のような教科に関する部分から成り立っていた．研修の初期段階で特に重要であったのは，第３日目の数学教育の困難点，第４日目の試験と評価というプログラムであった．両者ともに，研修指導者が話題提起を通して，問題点に注目するところまで参加者を導いていった．しかしその後は，参加者である経験豊富な教員たちが，論を尽くして，その問題に対する処方を自ら議論した．例えば第４日目のプログラムでは「数学教育において国家試験の成績が極端に悪い．その原因は何か.」という問いに関する議論から出発して，様々な問題点やその原因について議論し，最終的に「解決法は各人の手にある」ことを，参加者自らが確認していくプロセスであった．近年重視されているオーナーシップを醸成する国際協力活動には，時間がかかろうとも，このような参加者自らが納得する過程を経ることが重要であると考える．

研修最終段階である第９日目には，次回の研修までの一年間における活動計画（研修間計画と呼ぶ）を立案する時間を設定した．研修は１年のうち高々２週間のことである．この期間は契機を掴むという意味で大切であるが，研修の成果として求められているのは研修と研修の間における平常の教授活動の変容で，そこに制度の個人レベルでの問題が集約され，研修の成否がかかっているという認識に基づいて，研修間計画を重視した．

さらに数学教育に関する部分をより詳しく見ていく．基礎調査に基づいて，生徒の活動を重視し生徒間の相互作用を考慮した授業の実現が，本プロジェクトの柱であった．それを標語として整えるべく，成功的な授業の要因をピックアップしたものがASEI（Activity, Student centered learning, Experiment, Improvisation）である．この標語はプロジェクト全体の方向性を捉えたもので，実験や実験器具の即興的工夫が含まれており，数学という教科の特性を考えたときに，生徒の活動をより鮮明に打ち出す必要があった．それは生徒の学習活動において，興味・関心をより効果的に引き出すために社会文化的側面を活かし，また生徒自らが数学的に考える力を養うために探究活動を行い，それらを実現するために教師がこれまで以上に責任を持って教授活動に取り組む，ということである．要約すれば，「社会文化的側面，数学的探求，生徒中心の学習，そしてより責任を伴った教育」の４点になる．

さらに研修では，これらのASEI並びに数学科での４つの目標を，理念から授業へと，橋渡しすることが求められた．数学の授業での活動と言えば, 日本ではすぐに問題解決が思い起こされるが, ケニアでは必ずしもそのように結びつかず，計算問題をドリルすることすら，数学的活動と捉えて憚らない教師が多くいる．ところがこうした教師も，われわれが面接するときには，単純な伝達的授業を否定しているのである．そこで生徒の考えを問題解決の中で引き出し，積極的参加を促すような授業の具体化に向けて取り組まなければならなかった．

これが先述の研修と研修の間の活動－研修間活動－の中心事であり，その指針を与えてくれる理論として，研修ではオープン・エンド・アプローチを取り上げた．どのように素晴らしい理論であっても実践に移すには，実情にあった調整が必要であり，そこでは授業レベルでの反省的な考察が求められる．研修を通して，公開授業やティーム・ティーチングのように他教師が教室に居ることが不自然でなくなり，互いの切磋琢磨を通してより良い授業を実現することへ, 渇望が高まった．これが研修方法として定着するには時間がかかるし，今後多くの実践例を積み重ねていかなければならない．

ここまでの研修成果であり同時に今後の課題形成のための反省材料として，特に教師，生徒の態度面に注目した授業研究の事例を二つ取り上げる．

（1）オープン・エンド・アプローチを用いた授業の授業研究（注２）

中央研修を企画・実施する立場にあるケニア人スタッフが，日本で研修中に参観した授業研究に感銘を受けて帰国した．授業研究とは同僚の教師が，授業を参観して授業者を鍛える研修システムを指すが，彼女が驚きに似た感動を示すのは，そうしたシステムがケニアにはないからである．中

央研修では，彼女の主導でティーム・ティーチングに触れた．当初参加者は，授業に他の教師が入ることに驚きを示した．彼らにとって自分以外の教師が自分の授業に関与すること自体，異文化体験であったと思う．しかし研修後には，オープン・エンド・アプローチでティーム・ティーチングを用いた授業を行いたいという教師が現れた．その授業の内容と，授業を受けた生徒の反応を次に示す（Miheso et al, 2000, p.32）．

参観した授業は，1999年11月11日にキシイ・ディストリクトの女子校で行われた．参加した生徒は中学２年生の女子37名で，授業内容は図３に挙げるように三角形の求積であった．三角形の面積の求め方は，これまで様々な教育段階，学年で教えられてきたが，本授業ではそれらをまとめて色々な解き方で，面積を求めるというものであった．日本で実施されているオープン・エンド・アプローチを用いた授業とは異なるが，そこにはケ

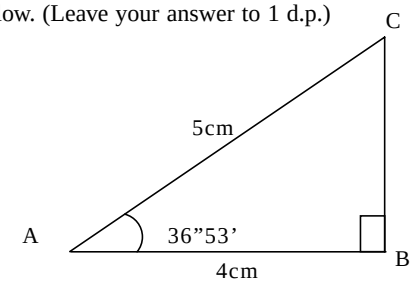
Mathematics Lesson Worksheet

DATE:	11/11/99
CLASS:	FORM2E

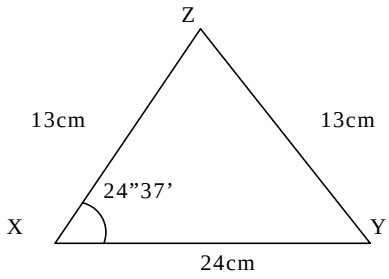
Use all possible correct methods to answer the questions below;

1. Find the area of the triangle below. (Leave your answer to 1 d.p.)

(I)



(II)



2. Find the shaded area in the circle below if O is the center of the circle whose radius is 7.14cm.
(Leave your answer to 1 d.p.)

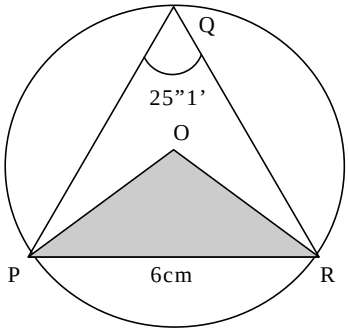


図３　授業案

ニアなりの適応が見られる．

授業後に実施した生徒に対するアンケート調査の結果の概要を下に示す．

「今日の授業は楽しかったですか」に対し，

「はい」と答えたもの37人．

「いつもの授業と違いましたか」に対し，

「はい」と答えたもの37人．

「きょうのような授業をもう一度したいですか」に対し，

「はい」と答えたもの37人．

今後さらに授業の中身を吟味することは必要だが，上記の結果は教師の取り組みが，生徒の態度的側面に好影響を与え得る可能性を示している．

（2）ルガリ・ディストリクトにおける授業研究と数学教育の会

ルガリ・ディストリクトにおいて数学科D/T（注３）（１名）の授業を他の数学科D/T（３名）とともに参観した．ディストリクト視学官，当該校の学校長，並びに物理や化学のD/Tも授業研究に自らの意思で参加した．

授業の概要を説明する．2000年２月24日に参観したのはこの地方の有名男子中学校で，見学した授業には１年生の男子31名が出席していた．授業の内容は，整数の割り算であった．

冒頭で出された掛け算の復習問題

$-5\times8\times-2=+80$

に対して，当てられた生徒は間違って－2の代わりに－10として計算した．その問題を説明した後，

$5\times t=-20$

$-20/5=-4$

$t=-4$

を生徒と共に解いた．その時に，半数の生徒が分かっていない様子を教師は見てとると，小学校の既知の学習内容に戻り，生徒に掛け算と割り算の関係を説明させた．

$3\times2=6$

$6\div3=2$

$6\div2=3$

いま一度，生徒全員と共にこの関係を確認し，それから最初の問題にある負の数に適用した．

さらに，$-5\times-3=+15$が与えられた時，

$+15\div-3=-5$

$+15\div-5=-3$

と，生徒が問題を解いた後，さらに教師は三つの問題を出し，最後に教師が掛け算と割り算の関係を纏めた．

参観の後，その日の授業に関して意見交換をした．黒板の使い方，発問の仕方等に対するコメントが相次いだ．特に生徒が分からなかった時に，自然数の掛け算に戻り生徒に説明を求めたところは，プロジェクトの柱である生徒の活動を具体化した箇所である．この授業参観と意見交換という機会は非常に有意義で，参加者一同が満足感を持つことができた．このディストリクトではこれを発展させ，定期的に開催される数学教育の会にする計画ということであった．

後日のこと，上記の授業研究に参加したディストリクト視学官が，研修に未参加の教師による授業を見学した感想を，話してくれた．端的に言えば，上記のD/Tの授業に比べ生徒を授業に巻き込んでいないというのがその趣旨であり，本プロジェクトの生徒中心の授業というのが少しずつ実を結び始めているのを，感じた．

４．調査研究から得られた今後の課題について

本報告では，数学教育分野の国際協力の先端的事例として，ケニア中等理数科教育強化プロジェクトでの活動状況について述べた．国際協力研究のように，実践的かつ先端的な研究分野では，近接分野からの理論的支援を受けると同時に，実践の中から課題を浮き掘りにしていく作業が不可欠である．そこで今回の調査研究で得られた知見を，今後の課題としてまとめたい．

第一に，プロジェクトの標語であり，数学科において最も重視された〈生徒の活動〉は，基礎調査でインタビューしたほとんど全ての教師が，その重要性を受け入れている．ところが実際には，黙々と練習問題を解く生徒の姿を見ることはできても，活動を通して数学的な考え方を伸ばしているとは言いがたい状況であった．それに対しSMASSEプロジェクト数学科では数学的な探求活

動を活発化し，また生徒の社会文化的環境に配慮した学習を教室の中で実現することを，４項目で表した．これらを実現するには，学習指導要領を反省的に分析し，その目標や内容を授業計画やワークシートなどの教材によって具体化していかなければならない．

次に，学習指導要領並びにこれらの授業計画や教材を用いて，プロジェクトでの教育理念を実際の授業に仕立てていかなければならない．前節の２例に見られるように，授業研究によって教師は多くのことを互いに学び，共有する可能性を持ち合わせている．今後，この授業研究がケニアにおいて独自により深い形で展開することが，期待される．

教育の主要な部分はカリキュラムによって表されるので，カリキュラムの３つの区分を用いてこれらの課題の関係を明確にしたい．

学習活動の目標，内容，方法等を書き留めたものは，意図されたカリキュラム（Intended curriculum）と呼ばれる．現地文化を考慮した教育は，先ずこのレベルで記されなければならない．つまり「意図されたカリキュラムにおいて，文化的側面を活かして，各人の問題解決能力を十分に引き出す枠組みを考察すること」が，第一の課題である．次に，意図された計画に対し，教師が実行するレベルとさらに学習者が習得するレベルを区別すると，「意図されたカリキュラムと教師によって実施されたカリキュラム（Implemented curriculum）との乖離の解消を考察すること」が，第二の課題である．なぜなら万人のための教育宣言に表現される新しい教育開発観は，開発途上国の抱える切実な課題意識に端を発しており，美辞を越えてカリキュラムの実施レベルに焦点付けた研究を求めている．そこには，前節でも見てきたように日本の教育実践の中から出てきた授業研究が，格好の手法を提供している．

もちろん学習者によって達成されたカリキュラム（Attained curriculum）の分析並びに反省も重要である．ただし私たちの研究関心が心理学的究明ではなく教育的実践にある限り，このレベルでの研究は独自に存在するわけでなく，評価をいかに次の計画並びに教室での実践に活かすかという視点が欠かせない．その意味でここでの考察は，前二者に統合される．

第３番目の課題として，これら計画されたカリキュラムとその教育実践としてのカリキュラムが全体として十分に機能し，最終的に教育の質的向上に寄与するには，冒頭で述べてきたように教育行政機関，地域社会，学校，教員が互いに呼応し，教員研修が制度として定着する必要がある．そこでは教員集団の形成, 校長のマネージメント強化, 視学官制度の充実など制度の組織的側面と，カリキュラムの関係を明らかにすることが求められる．これは従来の数学教育研究の範疇には入らないが，国際協力の視点で数学教育を捉えていこうとするとき，学校経営，教育経営の視点より教科教育を捉え直すことにつながる．

日本政府は平成８年４月の国連貿易開発会議（UNCTAD）総会で「アフリカに対する教育支援」を表明し，この分野での国際協力に乗り出した．冒頭に掲げたメッセージは，さらにそれに対して理念を与えようとしたものである．これを言葉だけに終わらせないためにも，内実のこもった教育協力が求められている．一方アフリカ諸国は，国際教育調査で好成績を残し，かつ日本の科学技術を下支えしている理数科教育分野での協力を期待している．そのような状況下，1992年から1997年まで実施されたフィリピンでの先駆的教育プロジェクトの後を受けて，理数科教育プロジェクトがケニア，ガーナをはじめ多くのアフリカ諸国で実施され，またはされようとしている．

そこで日本にできることは何かを，改めて問い直すことは，ここ130年にわたる近代化への歩みの中で，２度の開発途上国を経験した日本の数学教育を文化的，歴史的に振り返ることであり，同時に今日の日本の数学教育を世界のそれに，適切に位置づけることをさすであろう．その意味で上に述べた３つの研究課題は，日本が有する数学教育の理論と実践を自ら問いつつ，地球的規模の課題との関連で国際社会の一員として生きる道標を指し示している，と言えるだろう．

注１　両者とも外務省ホームページより一部引用（http://www.mofa.go.jp/mofaj/kaidan/s_moriを参照）．

注２　米国の数学教育者の間で，授業研究が職能

成長を図る制度として近年注目されている．本研究に関係は深いが，ここではケニアの教員研修と直接関係がないため，ホームページを上げるに留める．

http://www.lessonresearch.net/aera2000.pdf

http://www.tc.edu/centers/lessonstudy/

注３　D/TはDistrict Trainerの略．ディストリクトの教師で各教科４名ずつ選ばれる．中央研修を受けた後，ディストリクト研修を実施する．

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追記

（Kanja,Baba（1998）より抜粋．項目のみ和訳する．）

I. インタビューの結果

（１）教師と生徒の態度（Attitudes of teachers/students）

(a) Teachers' view

*Almost all teachers interviewed said that students, especially girls, had a negative attitude towards mathematics. And that attitude is developed among the stu-

dents.

*The teachers are unable to attend individual student because of large number of students in one class.

(b) Students' view

*Most students complained of teacher's laxity in their teaching and missing lessons regularly.

*Students fear that the teacher harass them.

COMMENTS

*There is a need to develop interest in mathematics in our students irrespective of their attitudes in the subject.

*Teacher lacks commitment or responsibility.

*Teachers must not fail to attend classes and should be aware of their time table.

（２）教科内容（Contents）

(c) Teachers' view

*Too much contents to cover.

*The students lose interest somewhere in Form II.

*Form III mathematics is difficult.

*Some contents are not covered.

*Difficult topics: three dimensional geometry and several other topics are metioned.

(d) Students' view

*Upper levels, forms III and IV, complained of not mastering the lower skills and found the mastery of higher skills difficult.

*Difficult topics: trigonometry, locus, integration, further trigonometry.

COMMENTS

*Teachers must therefore diagnose the weakness of students to be able to monitor their progress as they move from one stage to the next.

*Teachers assume for example that fraction has been covered in a primary school content and hence treat it lightly.

（３）教授方法（teaching method）

(e) Teachers' view

*Teacher lacks effective teaching aids

*Teacher makes students active;

(i) by giving exercises and questions in class,

(ii) by giving assignment after class,

(iii) encouraging students to ask questions.

(iv) individual attention to the poor students during and after class.

(v) group work is arranged by teacher during and after class.

(vi) encourage the discussion during double lesson.

(vii) a committee is formed to assist weak students.

(viii) three boys, bright, average and slow, are called to the front to attempt the same question. (Only Makueni boys)

(ix) The teacher stimulates the students to strive hard by talking about the performance of other schools.

(x) The reward is offered to the best performed student

*Teaching load is very heavy.

*Teacher get a feedback from students by asking verbally.

(f) Students' view

*Teachers do not mark assignment work regularly.

*Teachers teach too fast in order to cover the syllabus.

*Teacher feel bothered by students when asked questions continuously.

*They want to have more exercises besides the ones in textbook.

*They don't understand the content but are unable to ask questions.

*They don't know the today's topic in advance.

COMMENTS

*No lesson plan or scheme of work is necessary.

*Teachers seemed to take for granted many points which need to be attended to.

*Teachers deviated from the teaching method which they learned in the college or university and tended to use inappropriate methods of teaching.

（４）生徒の活動と生徒間の話し合い（Interaction and activity）

(g) Teachers' view

*Teachers are very positive about interaction and activity. However, further question reveals that most of the teachers allow such interaction to a very limited extent.

*Some teachers admitted that they don't have activity because of time factor.

*Very little discussion among the students.

(h) Students' view

*No discussion during class.

COMMENTS

*Interaction is very limited and controlled by the teacher.

（５）その他（Other areas）

(i) Teachers' view

*Lack of textbooks.

*Teachers claims a gap between primary and secondary mathematics.

*KCSE mathematics performance indicated that candidates found the mathematics examination difficult.

*Students are not coming to school continuously.

*Teaching load is too heavy.

*Besides examination, the objective of mathematics education is to train speed and accuracy.

(ii) Students' view

*They want to have more textbooks.

*They don't inform their parents about what is happening in school, fearing later harassment.

COMMENTS

*Teachers should be encouraged to contribute ideas on why performance in mathematics is poor and what, in their view can be done to improve performance.

*Teachers are better placed to give reasons for the poor performance.

II. 授業見学（CLASS OBSERVATION）

見学した12のクラスのうちで，次の活動項目が見られたもの.

Item	yes	no
生徒がさらに考えるよう励ます（Encouragement for further thinking）	0	12
生徒がさらに考えるよう刺激する（stimulation for further thinking）	0	12
解法を生徒が議論する（discussion by students about method）	0	12
複数の解法を議論する（multiple solutions）	0	12
やさしい場合のみを扱う（only easy cases）	12	0

その他に授業見学から得られた点.

*Lack of confirmation whether students really understand.(eye-contact, verbal question etc.)

*Lack of reading and interpreting ability.

*Provider-receiver relationship

*Few sketches and no movement.

*Formula centered teaching

*Lack of attention to poorer students

*No communication among the students during the lessons.

*Teacher talked and at the same time wrote on the chalkboard most of the time.

*Teacher doesn't pay attention to what the students recorded in their notebooks.

Abstract

Consideration of International Cooperation in the Field of Mathematics Education: The Case of the Strengthening Mathematics and Science at Secondary Education (SMAASE) Project, Kenya

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The role of basic education is refocused from different angle at Jomtien Conference (1990) after 30 years have elapsed since international conferences on the educational planning were convened for universal primary education around 1960. In this conference, it is regarded as a part, and especially a fundamental part, of human rights rather than as a tool to attain economic development. Thus international cooperation in the field of education is geared towards improvement of its quality as well as quantitative attainment of the universal basic education. In this direction Japanese government has committed herself during UNCTAD general conference to the education in Africa, and the SMASSE (Strengthening Mathematics and Science at Secondary Education) project, between Kenyan government and Japanese government is one development of such commitment in the field of mathematics and science education at the secondary level. This report has intended to present what the project considered and implemented during the early stage. And through this presentation, the authors have presented two implications towards theorization of international cooperation in the field of mathematics education. They are namely consideration of socio-cultural aspect in mathematics curriculum and professional development of teachers through lesson research.

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Influence of Teachers' Personal Variables to Teachers' Mathematics Achievement and Instructional Skills: A Study on the Effectiveness of In-service Training in the Philippines

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Abstract

In the effort to upgrade teachers' as well as pupils' mathematical competence, the University of the Philippines National Institute for Science and Mathematics Education Development (UP NISMED) spearheaded the most number of teacher trainings in the Philippines. This paper reports a study carried out to investigate if there is a relationship between the teachers' personal characteristics and the teachers' mathematics achievement as well as the improvement of their instructional skills as a result of the training they participated in under UP NISMED's in-service program. It also describes the heart of the in-service program that devoted to reinforcing the use of Practical Work as a springboard to developing understanding of mathematical concepts. This is in keeping with the time-tested principle "hands-on, minds-on and hearts-on" approach.

INTRODUCTION

In-service education plays a vital role in bringing innovative practices and new knowledge to all educational personnel. This is an inevitable way of keeping the teachers abreast to the knowledge and skills they must possess to continuously educate pupils of today's generation with a wide spectrum of experiences, beliefs and abilities.

In a developing country like the Philippines, there has been a growing recognition of the need for competent mathematics teachers to alter the practices in the teaching of mathematics and to improve pupils as well as teachers' performance in mathematics.

In the effort to improve mathematics education, concerned authorities sought funding assistance from various organizations and agencies in and out of the country (UNESCO Report, 1999). Thus, Johnson and Johnson Phil, Inc. funded one of the recent teacher trainings in the country with which the University of the Philippines Institute for Science and Mathematics Education Development (UP ISMED now UP NISMED - National Institute for Science and Mathematics Education Development) was the training agency. Johnson and Johnson agreed to give financial assistance on the assumption that certain desirable outcomes will be achieved. In addition to these outcomes, it was deemed necessary to determine what, among the teachers' personal variables influence mathematics achievement as well as instructional skills of the teachers.

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The teacher training in June 1997 gave the opportunity for the researcher, being a member of the teaching staff of UP NISMED, to study and evaluate its result. This study sought relevant data and relationships between teacher variables and outcomes of the training from which decisions could possibly emanate for subsequent training programs in the country.

The Study

The study investigated the result of the In-service Training Program that had been conducted by UP NISMED to Grades 5 and 6 Mathematics Teachers in the Division of Parañaque, Philippines. Its primary aim was to determine whether the teachers' personal characteristics such as age, number of years in teaching mathematics, and educational attainment are significantly related to the teachers' achievement in Mathematics and instructional skills.

The In-service Training Program (INSET)

The training program has three -pronged general objectives; namely, to promote the use of Practical Work as an instructional strategy in teaching Mathematics, to demonstrate techniques that develop higher order thinking skills, and to help teacher-participants improve mastery of the curriculum content (UP NISMED Elementary School Mathematics Workgroup Report, 1997).

According to the modern views of mathematics and mathematics teaching and learning, the ultimate purpose of Practical Work is to develop in the pupils varied thinking processes (Ball, 1989). It gives pupils the opportunity to work with manipulative materials as a springboard to developing understanding of mathematical concepts. Teaching for conceptual understanding, according to Ball, is the most important process. She regarded it as the grindstone of learning. With Practical Work, pupils must be actively involved, and their engagement must move from concrete to the abstract levels. In this approach, telling and explaining are less the teacher's trade. Instead, the teacher serves more as a guide, facilitating pupils' learning by posing problems and asking questions aimed at helping pupils clarify their thinking (e. g., "What can you say about these two objects?", "In what way are they related?" or "Suppose I cover the third number can you explain how to get it?"). All these are believed to have helped pupils explore and make sense of mathematics.

In every session in the training, teaching strategy which focuses on the development of thinking skills, and mastery of the curriculum content were integrated. The training content adopted the topics in the Minimum Learning Competencies (MLC) provided by the Department of Education, Culture and Sports (DECS). The strategy-related topics included Planning a Lesson, Thinking Skills, Mathematical Investigation, Problem Solving, and Games in Mathematics.

Specific training goals and objectives were discussed with the teacher-participants at the beginning of the program, taking the results of a pretest mostly in multiple choice, problem solving and open-ended type questions into account. The same objectives guided the different training sessions and activities throughout the program. The program ended with a posttest identical to the one given at the start of the program.

METHODOLOGY

Research Design

This study made use of a correlational method as it attempted to discover the magnitude of the rela-

tionship of the teachers' personal characteristics to their mathematics achievement as well as their instructional skills.

For the teachers' mathematics achievement, a Pretest and Posttest instrument was used. The items were in multiple choice-type, capstone problems that required the teachers to synthesize and integrate concepts and calculational techniques, and open-ended type questions where the teachers were tasked to validate their conjectures, make generalizations, and the like (Appendix 1). The purpose of these pre-post tests was to find out how well the teachers have improved their knowledge in mathematics as a result of the training program. Also, the result of the tests was analyzed to find its correlation with the teachers' personal variables (age, number of years in teaching mathematics, and educational attainment).

For the teachers' instructional skills, the instrument Classroom Observation Checklist was used. It consisted of 20 statements on instructional skills. In a scale of 1 to 5, with 5 being the highest, the mathematics supervisor rated the teacher-participants as to how they execute a particular lesson in the classroom (Appendix 2). The purpose of the checklist was to find out if the different instructional skills taught in the training were carried out or manifested by the teachers in the way they taught their lessons in their respective classes. In addition, this checklist was used to make comparison of the performance of the teacher-participants in terms of their instructional skills before and after the training. The score increment in this checklist was analyzed against the identified teachers' personal variables.

The teacher training program were participated in by 34 mathematics teachers teaching Grades 5 & 6 from the Division of Parañaque, Philippines, but, with this number, one teacher did not provide any information about his profile. Table 1 shows the distribution of teachers by grade level and school.

Table 1. Distribution of Grades 5 and 6 Teachers by Grade Level and School

SCHOOL	Grade 5	Grade 6	TOTAL	Percentage
Parañaque Elementary School - Central	3	5	8	24.2
La Huerta Elementary School	1	1	2	6.1
Parañaque Elementary School District III	5	1	6	18.2
Tambo Elementary School	4	3	7	21.0
Sto. Niño Elementary School	2	0	2	6.2
Baclaran Elementary School District I	3	3	6	18.2
Baclaran Elementary School District II	1	1	2	6.1
TOTAL	19	14	33	100

The Pearson Product-Moment of Correlation was employed to determine if there exists a relationship between the independent variables (teachers' personal characteristics such as age, no. of years in teaching mathematics, and educational attainment) and the dependent variables (the score increment in the pretest and posttest and the score increment in the teachers' instructional skills before and after the training). A high positive correlation between an independent and a dependent variable implies that the independent variable is a good predictor of the dependent variable.

Research Procedure

Teachers' Personal Data

The teacher-participants were asked to accomplish the personal data sheet attached on the first page of the pretest given at the start of the training. The information about age, educational attainment and number of years in teaching mathematics were basically the items asked in the form. The teacher-partici-

pants' age and number of years spent in teaching mathematics were rounded off to the nearest year. For their educational attainment, it was categorized into 4 levels: 1 for baccalaureate degree; 2 if there were master's units earned; 3 for master's degree; and 4 for those who managed to earn doctoral units. These variables were analyzed to find their relationship to the teachers' mathematics achievement and instructional skills.

Pretest/Posttest and Classroom Observation Checklist

The raw scores from the pretest/posttest and the teachers' instructional skills rating were gathered. The score increments from these scores were computed to find out whether the results have been influenced by the identified teachers' personal variables.

PRESENTATION, ANALYSIS and INTERPRETATION of DATA

Participants' Profile

The teachers' personal characteristics referred to in the study is peculiar to the set of Grades 5 and 6 teachers who attended the UP NISMED teacher training program for the Division of Parañaque, Philippines. Table 2 shows the distribution of the teacher-participants by age, educational attainment, number of years in teaching mathematics and the grade level they teach.

Table 2. Profile of Grades 5 and 6 Teacher-Participants

Educational Attainment	1	2	3	4			total
	16	10	6	1			33
No. of Yrs. Teaching Math	No experience	Below 5	5-9	10-14	15-19	20/above	total
	1	10	3	3	5	11	33
Age	25-29	30-34	35-39	40-44	45-49	50/ above	total
	2	4	3	2	7	15	33

Mirroring national trends, schools in the lower grades were staffed largely by women. In fact, in this study, majority of the Grades 5 and 6 teacher-participants were females. The ratio of male to female was about 70%.

Regarding the educational attainment of the Grades 5 and 6 teacher-participants, one had started her doctoral degree; six had finished master's degree while ten had earned master's units. Almost 50 percent of the teachers were graduates of Bachelor of Science in Elementary Education or Bachelor of Science in Industrial Education.

As per the teachers' number of years in teaching mathematics, majority of them had taught elementary mathematics from 1 to 9 years. Twenty-four percent had 10 to 19 years experience while one-third had 20 and above. However, one teacher had not taught mathematics at all.

Moreover, for the age of this group of teachers, two-thirds had ages ranged from 45 and above, 58 being the oldest. About one-fifth of them were in the age-ranged 30 to 39 while two were below 29 years old.

The percentage of teachers belonging to the age group of less than 29 years was 6.1 percent, while 39.4 percent have a teaching experience of only 1 to 9 years. The great discrepancy between the variables age and number of years in teaching mathematics could be associated to the following possibili-

ties: that most of the teachers were not initially meant to teach elementary mathematics as they enter the teaching profession, and that most of them might have preferred teaching subjects other than Mathematics during the early stage of their teaching career.

Teachers' mathematical and teaching abilities as a result of the INSET

In the study, there was a presumption that because of the training, the teachers significantly improved their knowledge and skills in mathematics and their instructional skills in teaching the subject.

To test whether the teacher-participants have significantly improved their knowledge and skills in mathematics, their raw scores in the pretest and posttest were subjected into a two-tailed test of a Paired Comparison (or Dependent) t test at 0.05 level of significance. Table 3 summarizes the t test for these scores.

Table 3. Analysis of the Paired Comparison (or Dependent) t test for the Pretest and Posttest Scores of Grades 5 & 6 Teacher-Participants

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
PRETEST	7.91	34	4.67	.80
POSTTEST	16.74	34	3.31	.57

Paired Samples Correlations

	N	Correlation	Sig.
PRETEST & POSTTEST	34	.587	.000

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
PRETEST - POSTTEST	-8.82	3.83	.66	-10.16	-7.49	-13.449	33	.000

The pretest mean score (7.91) was 36% of the total perfect score (22 points), while that of the posttest (16.74) was76%. The posttest mean score inched up to more than twice of the pretest. This gives an initial impression that the teachers' performance in the posttest was better than in the pretest since there was a gain of 40% in the percentage of mean scores.

A comparison of the standard deviations for the two distributions (4.67 and 3.31) shows that the scores in the posttest were less spread out from the mean than the scores in the pretest. It can be noted also that while the pretest has a greater variability (4.67), it has a smaller measure of central tendency (mean=7.91) compared to the posttest' standard deviation of 3.31 and mean score of 16.74. This could be described as being better and more homogeneous in their knowledge of mathematical concepts when the teachers took the posttest than in the pretest.

Also, there exists a significant correlation between the pretest and posttest ($r=0.587$, $p<0.05$). This indicates that those who score high on the pretest tend to score high on the posttest. The finding suggests that the INSET broadened what existing knowledge and skills the teachers may already have.

Tested at 0.05 level of confidence, t test reveals a very small (<0.05) p value (Sig.(2-tailed)) associated with the t value of -13.449. The result gave enough evidence to accept the hypothesis that teachers who participated in the training program have significantly improved their knowledge and skills in mathematics. Thus, the researcher is confident in saying that the observed differences in the pretest and posttest are not merely a function of chance coincidence but rather the effect of the training program with which the teachers participated in.

Furthermore, to test the presumption that the teachers' instructional skills have significantly improved after they participated in the training program, the mathematics supervisor's evaluation scores on the teachers' performance were subjected to the same statistical test as the pre- and posttest. The t test analysis for this data is presented in Table 4.

Table 4. Analysis of the Paired Comparison (or Dependent) Test for the Data from the Classroom Observation Checklists that were accomplished by the Mathematics Supervisor

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Before	59.9091	33	1.4001	.2437
After	83.2121	33	7.6924	1.3391

Paired Samples Correlations

	N	Correlation	Sig.
Before & After	33	.533	.001

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Before - After	-23.3030	7.0467	1.2267	-25.8017	-20.8044	-18.997	32	.000

The mean scores of the teachers' instructional skills 'BEFORE' the training is moderate (59.91%). This means that the teachers were already equipped with good instructional techniques based on the supervisor's criteria before they attended the training. The level of attainment AFTER the training was 83.21%.

The correlation between the teachers' instructional skills before and after the training was 0.533. This was supported by a very small (<0.05) p value (Sig.), which indicates that there was a strong linear relation between the teachers' performance before and after the training.

The mean score for the teachers' instructional skills before the training was about 23 points smaller than the mean score after the training (that is 59.91-83.21). The 95% confidence interval for the difference in means (-23.30) extends from -25.80 to -20.80. The p value (Sig. (2-tailed)) associated with the t statistic (-19.00) was very small (<0.05), thus, giving clear evidence that the difference of the means before and after the training was "real", that is, it was statistically significant difference. The analysis, therefore, confirms the assumption that the teachers have improved their instructional skills following their participation in the training program.

The main purpose of this paper is to present an evidence as basis for the acceptance or rejection of the following two hypotheses.

Hypothesis #1: Teachers' age and number of years in teaching mathematics are NOT significantly related to the following:

a. Teachers' mathematics achievement from the training; and

b. Teachers' instructional skills in the classroom after the training.

Hypothesis #2: Teachers' Educational Attainment is significantly related to:

a. Teachers' mathematics achievement from the training; and

b. Teachers' instructional skills in the classroom after the training

In this study, the teachers' mathematics achievement was represented by the score increment in their pretest and posttest. Thus, to determine the relationship between the teacher-participants' mathematics achievement and the variables: age, educational attainment and number of years in teaching mathematics, the Pearson Product-Moment Correlation was employed.

Table 5. Correlations between Teachers' Variables and Pretest/ Posttest Score Increment (N=33).

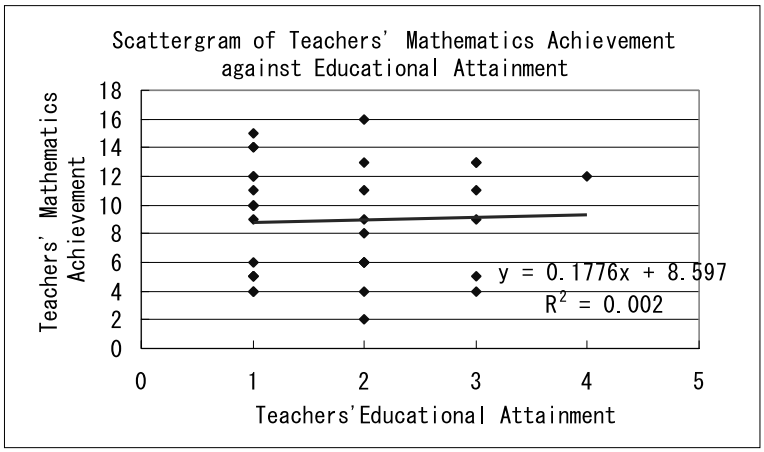
Teachers' Variables		Score Increment
Age	Pearson Correlation Sig. (2-tailed)	-0.145 0.414
Educational Attainment	Pearson Correlation Sig. (2-tailed)	0.059 0.741
Years in teaching Math	Pearson Correlation Sig. (2-tailed)	-0.337 0.051

Table 5 summarizes the correlation of the teachers' variables with the score increment in the Pretest and Posttest. The table reveals that there was no significant correlation between the score increment and the identified teachers' variables. This relationship is further pictured in Figure 1. It can be observed in the scattergrams that the plotted points are scattered in a random fashion, or the points largely deviate from the regression line. This is indicative of a less degree of relationship between the independent variables (teachers' personal characteristics) and the dependent variable (Teachers' Mathematics Achievement). Also, it is worth to note that in Figures 1b and 1c, the regression lines sloped down to the right. This implies that there were negative correlations, though the relationships were not found significant using inferential statistics, between the independent variables and the dependent variable.

On the other hand, to determine if the identified teachers' variables are related to the score increment of the teachers' instructional techniques scores before and after the training, the Pearson Product-Moment of Correlation was also used.

Table 6 gives the summary of the analysis for the correlation between the score increment from the teachers' instructional skills before and after the training, and the identified teachers' variables. This table shows that of the three identified teachers' variables, only the number of years in teaching mathematics ($r = 0.432$, $p = 0.012$) has a statistically positive significant correlation, tested at 0.05 level of significance (2-tailed), with the teachers' instructional skills. This means that teachers who have spent more years in teaching mathematics tend to demonstrate better instructional techniques than those with fewer experience teaching the subject. The variables age and educational attainment with -0.097 and 0.306 degree of correlation, respectively, were found to have no significant correlation with the teachers'

a)



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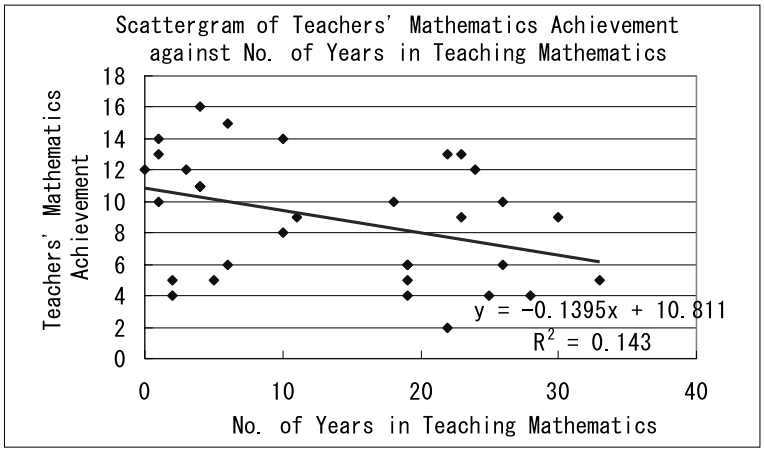

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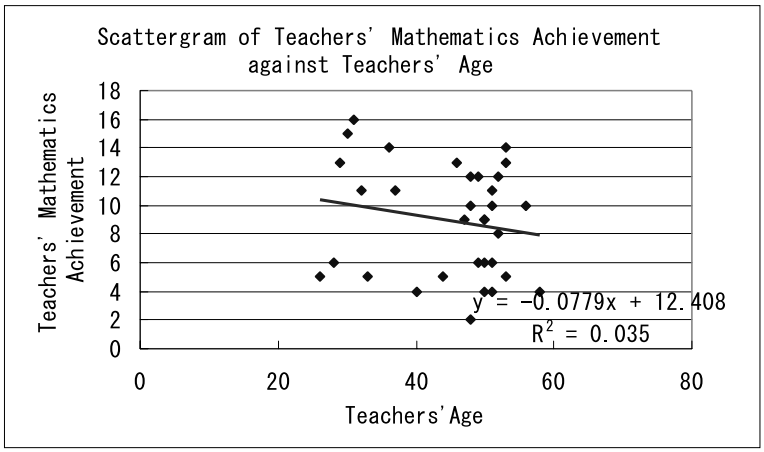


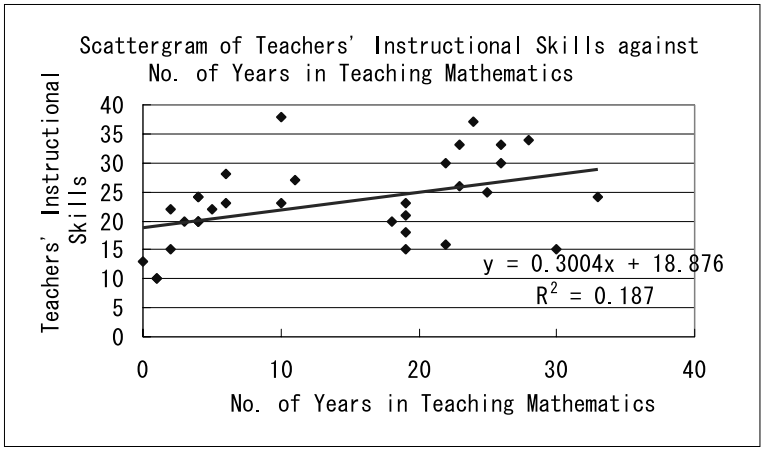
Figure 1. Scattergrams between the Teachers' Mathematics Achievement and the Teachers' Personal Variables

Table 6. Correlations between Teachers' Variables and Teachers' Instructional Techniques Score Increment (N=33).

Teachers' Variables		Score Increment
Age	Pearson Correlation Sig. (2-tailed)	-0.097 0.593
Educational Attainment	Pearson Correlation Sig. (2-tailed)	0.306 0.083
Years in teaching Math	Pearson Correlation Sig. (2-tailed)	0.432* 0.012

instructional techniques. Though it was not found significant, the negative value of the degree of correlation between age and instructional skills would give an enigmatic implication. It can be recalled that in the discussion of the teachers' profile, age does not seem to be positively correlated with teaching experience, a variable found to have positively correlated with better instructional techniques. A possible implication is that the higher the age does not mean having better teaching techniques but, seems to have, on the contrary, the other way around.

a)



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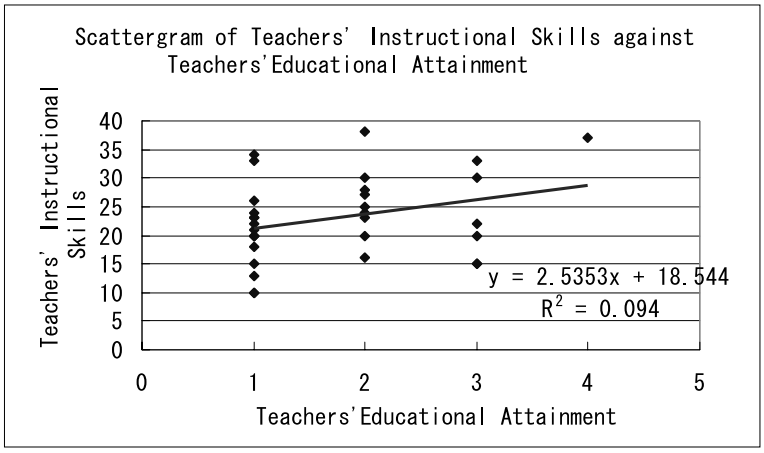

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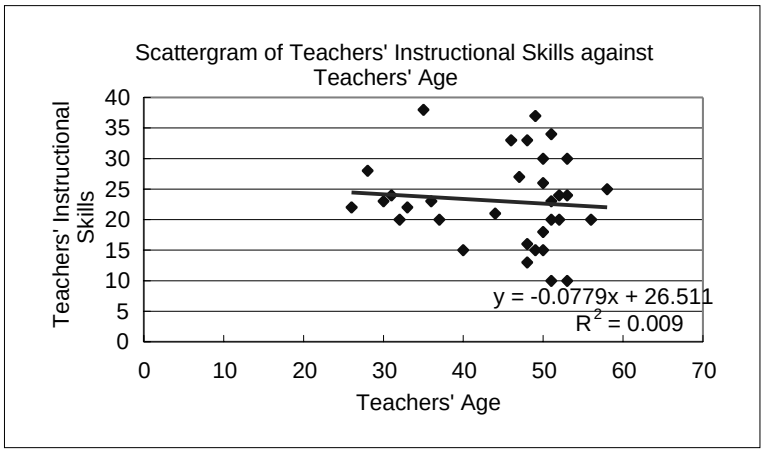

Figure 2. Scattergrams between the Teachers' Instructional Skills and the Teachers' Personal Variables

Moreover, the multiple regression correlation coefficient (R^2) in Figure 2a shows that 18.7 percent of the Teachers' Instructional Skills variance can be accounted for by its correlation with the teachers' number of years in teaching mathematics; the other 81.3 percent of the variability can be attributed to other factors beyond the purview of the study (e.g., size of the class, major course, minor course, sex, and others in addition to the ones mentioned earlier).

The Impact of the Training Program and its Implication

Among others, educational attainment was hypothesized to have a positive effect on the result of the training program. But, the outcomes of the statistical tests in this study consistently show that the teachers' educational attainment does not have significant impact on the teachers' mathematics achievement and improvement of instructional skills.

Except for the length of time the teachers spent in teaching mathematics, it is safe to say that the differences in the teacher-participants' scores in the pretest and posttest as well as the improvement in their instructional skills could not be associated to any of the other identified personal characteristics they possess but rather due to the effect of the training they attended.

Hence, the in-service training program that UP NISMED conducted for the elementary mathematics teachers of Parañaque Division had helped these teachers grow professionally. This confirms the claim of Ball (1989) in her study that the teachers' instructional skills, attitudes, and beliefs about mathematics significantly change following their participation in a training program. It is, therefore, within this premise that the researcher makes suggestion on the adaptation of parallel in-service programs to other divisions in the country. And more importantly, part of the sustainability of the project is to monitor and supervise the teachers' as well as students' activities inside the classroom, which would require more funding and assistance from concerned authorities and school officials.

SUMMARY and CONCLUSIONS

Summary of the Research Method

This study was undertaken to determine if there is a significant relationship between the teachers' per-

sonal characteristics such as age, length of service and educational attainment, and their mathematics achievement as well as their instructional skills.

The subjects of the study consisted of 34 Grades 5 & 6 Mathematics teachers who participated in the Parañaque Teacher Training Program, which was conducted by the Elementary School Mathematics (ESM) Workgroup of UP NISMED.

The instruments used in the study were the Pre-Post Test and the Classroom Observation Checklist. These were prepared by the UP NISMED ESM Workgroup by which the researcher is one of the members. The Pre-Post Tests were administered to the teacher-participants in 1 1/2 hours each. Meanwhile, the Classroom Observation checklist was used by the mathematics supervisor during classroom observations.

The Pearson-Product Moment Correlation was applied to determine the relationship between the teacher variables and the increments from the pretest and posttest scores as well as the teachers' instructional skills before and after the training.

Conclusions

No significant relationship was found between the identified teachers' personal variables and the teachers' mathematics achievement. However, the teachers' number of years in teaching mathematics had a low negative correlation with the mathematics achievement.

On the other hand, the teachers' number of years in teaching mathematics was found to have significant correlation, tested at the .05 level (2 tailed), with the teachers' instructional skills. Also, the teachers' educational attainment had a positive correlation with the teachers' instructional skills, but the degree of relationship was not considered significant.

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Burgess, R. and Galloway, S (1993). Does in-service education have an effect on classroom practice? In: R. Burgess, J. Connor, S. Galloway, M. Marrison, and M. Newton (Eds.), *Implementing In-service Education and Training* (pp. 169-173). London: The Palmer Press

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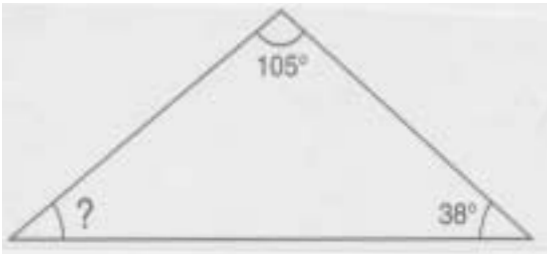
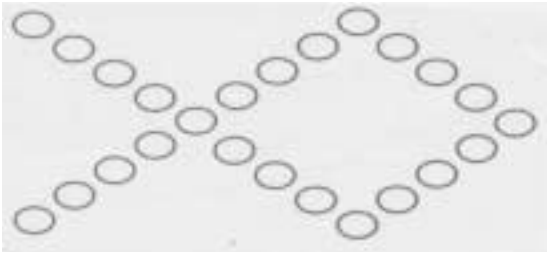
Appendix 1. The Program's Pretest/Posttest Items

1. Edna bought 3 apples for P28. If Aida has P252, how many more apples can she buy than Edna?

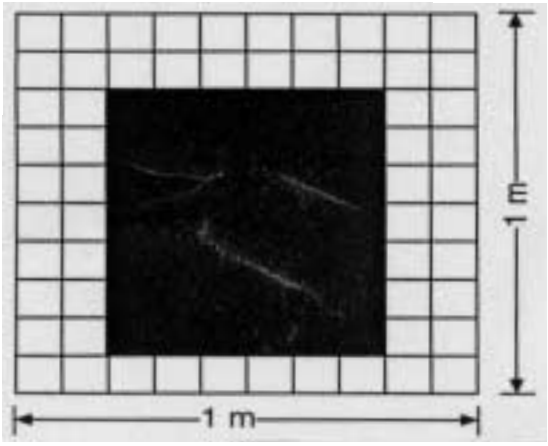
2. Find the measure of the angle in question mark by computation.



3. Write a number expression that tells the total number of circles in the figure.



4. What is the area of the shaded region?

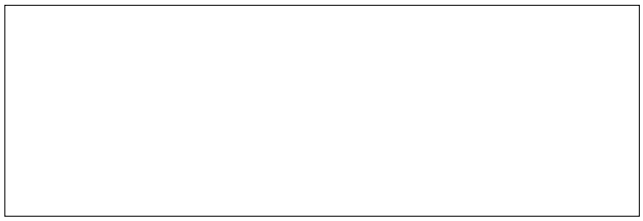


5. Nilo can bike 2/5 of a kilometer in 3 minutes. If he travels at the same rate, what part of a kilometer can he cover in one minute?

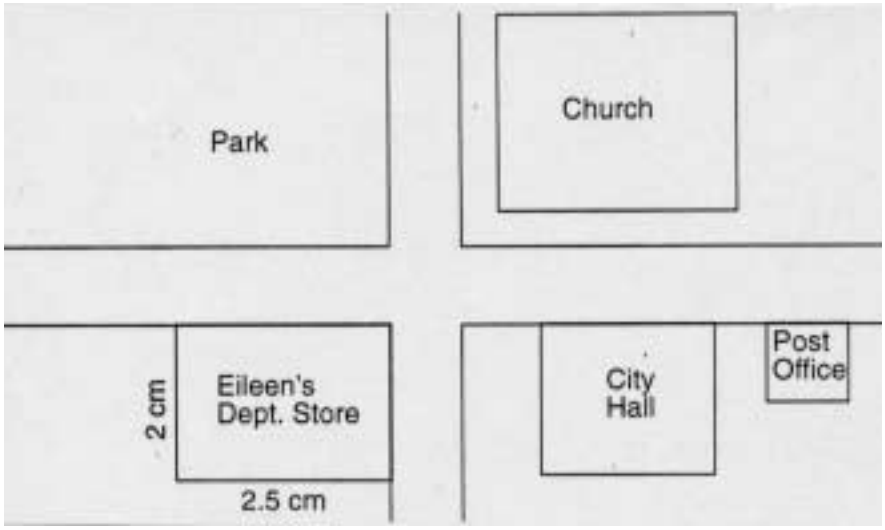
6. Ric was playing on a staircase. He went 3 steps up, 4 steps down and 5 steps up. If he is now at the

7th step, at which step did he start?

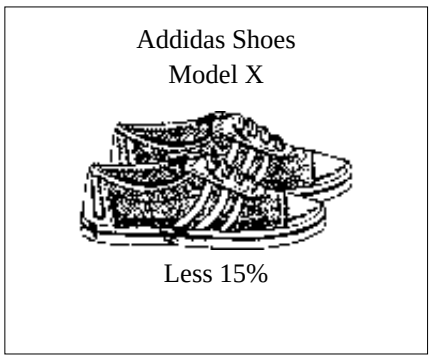
7. Mang Tirso can paint 3/4 of a wall in 2 hours. If the rectangle below is made to represent the entire wall, what part of the wall will Mang Tirso be able to paint in one hour? Shade that part of the wall.



8. Given the community map drawn to a scale of 1 cm: 20 m, approximate the perimeter of Eileen's Department Store.

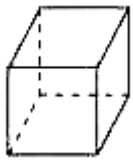


9. In Jill Mart, a pair of Addidas shoes costs P900. Ann's Department Store sells the same model of shoes at the same price. During a sale the following ads are displayed.



Which store sells the shoes at a lower price?

10. A net is the pattern of a spatial figure given so that when the edges are attached the spatial figure will be created. Draw a net of the given cube below.



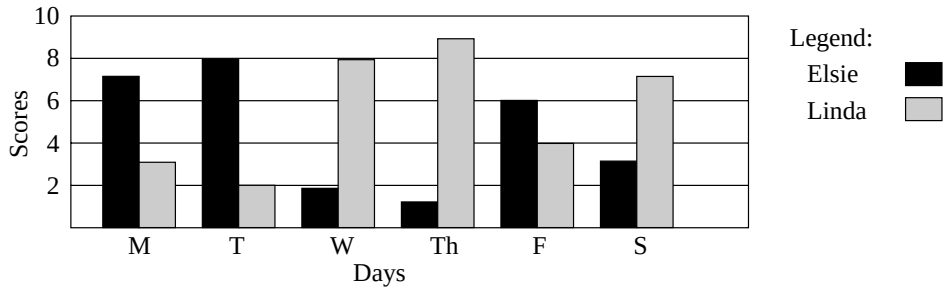
11. Simplify:

$$4/5 + (6 \times 8) - 2$$

12. Given the list of some appliances and their wattage, which one consumes more electricity: Two Air Conditioning Unit used for 30 minutes or three Fluorescent lamps (21" each) used for one day and 10 hours?

Appliances	Wattage
Air Conditioning Unit	358
Rice Cooker	650
Fluorescent Lamp (21")	32
Desk Fan (10")	40

13. Elsie and Linda played jackstones everyday from Monday to Saturday. The graph shows their daily scores.



Which of the following statements is NOT true?

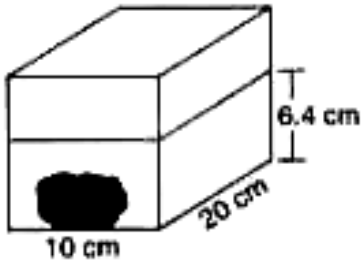
a. Linda's scores show greater improvement than Elsie's score.
b. The scores of the two girls were closest on Friday.
c. Linda had a total score of 38 points
d. On Monday, Elsie's score was 4 more than Linda's.

14. The following is the breakdown of Eric's weekly allowance.

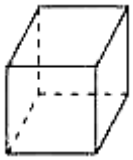
Transportation	31%
Food	40%
School Supplies	24%
Savings	5%

Construct a circle graph based on the above data.

15. The height of the water in the container rose from 4.6 cm to 6.4 cm when a stone was placed in it. Find the volume of the stone.



16. How many edges does this rectangular prism have? _____

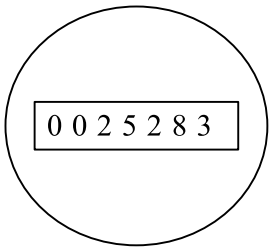


Make another problem about this rectangular prism.

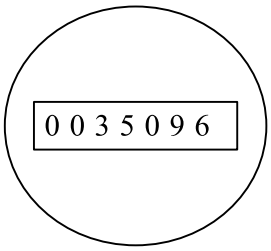
17. Consider the trapezoid below.

Partition it into other plane figures without changing its area.

18. The previous and present readings of a water meter for one week are shown below. If they reflect the <u>average</u> weekly water consumption, how many <u>cubic meters</u> of water was used monthly.



Previous Reading

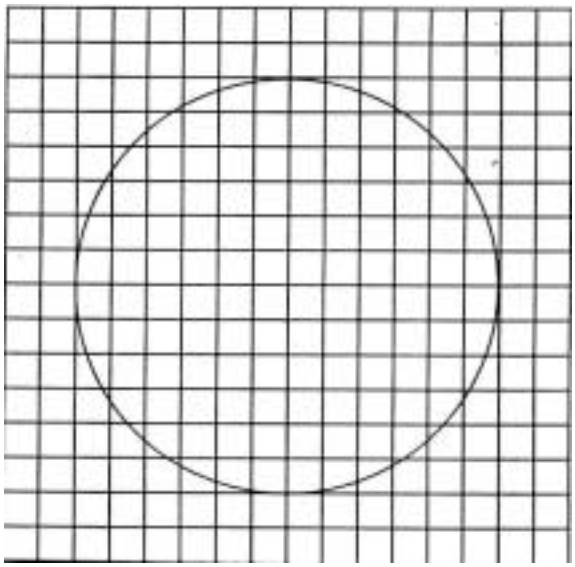


Present Reading

19. A circle cutout has been placed on a grid as shown below.

Find the following:

a. Circumference of the circle
b. Area of the circle



Appendix 2. Classroom Observation Checklist

Teacher Observed: _____ Date of Observation: ____ Time: ____
Class Observed: _____ School: _____
Lesson: _____
Observer: _____

Directions: Below are 20 statements regarding teachers' instructional skills with two sets of a 5-point scale. With "5" as the highest, rate the teachers' instructional skills before and after they have participated in the UP ISMED Teacher Training Program. If possible, please write some comments on your evaluation in each item.

Instructional Skills	BEFORE					AFTER				
	5	4	3	2	1	5	4	3	2	1
1. Clarifies the concepts by giving examples as well as counterexamples.										
2. Every activity has a purpose. It helps carry out the objective/s of the lesson.										
3. Prepares the pupils for the activity. Introduces the material and sees to it that the instructions are clear to everyone. Sets standards. Motivates everyone to participate in carrying out the activity and to share his or her ideas in the group discussions.										
4. When conducting an activity, manages the class well promoting an atmosphere of exploration while minimizing unruly behaviors.										
5. The time allotment is sufficient for carrying out the objective/s of the lesson. Prepares right amount of activities considering time allotment.										
6. Asks questions that promote higher order thinking.										
7. Follows up activities by means of questions and discussions.										
8. Gives every pupil opportunities to present or explain ideas/findings/results from group activities. Gives everyone a chance to become a group leader.										

9. Assesses pupil learning using appropriate method.										
10. When presenting a problem which is to be solved in groups, first, gives the individual pupils time to reflect on the problem before forming the group.										
11. Arranges the instructional steps logically.										
12. In conducting group work, avoids making large groups and sees to it that there is enough space for everyone.										
13. Helps the class analyze what makes some answers wrong or unacceptable.										
14. Uses materials appropriate to activities.										
15. While the activity group is in progress, goes around, observes, asks questions, watches out for misconceptions, and corrects them immediately.										
16. Encourages the pupils to always check their answers using other methods, if possible.										
17. In conducting whole-class discussion/ recitation, calls as many pupils as possible in order to promote participation from everyone, but discourages them from answering in chorus.										
18. Is accurate. Gives correct information, explanation, calculation, procedures, drawings, etc.										
19. Has a wide perspective of the topic.										
20. Emphasizes the essentials.										

Practices of Intra- and Inter-Firm Technology Transfer in the Thai Automobile Industry

Kriengkrai TECHAKANONT

Abstract

The main objective of this paper is to investigate actual practices of technology transfer in a recent automobile assembly project in Thailand and investigations are done at both intra-firm level - from the Japanese automaker (J-firm) to its affiliate (T-firm) - and inter-firm level - from J-firm to T-firm's suppliers. Necessary information was collected through field surveys, including factory visits and interviews with J-firm, T-firm and suppliers, and a questionnaire survey on suppliers. Major findings can be summarized as follows: 1) technology transfer was not limited only to intra-firm but also inter-firm levels, 2) at both levels, technology transfer process required substantial resource allocation, especially human resources exchanges and training, 3) formal training in Japan and on-the-job training (OJT) at T-firm were main strategies to develop local workers' skill at intra-firm level, 4) at inter-firm level, technical assistance by J-firm normally took the form of advice rather than direct support, 5) direct support would be provided only to suppliers that revealed possibility of delay, aiming to establish *systematic management practices* and to instruct specific technical aspects necessary for successfully preparation. These findings suggest that foreign direct investment not only promotes technology transfer at intra-firm level but inter-firm level as well.

1. Introduction

Inter-firm linkages between large-foreign and local-based-small firms in manufacturing sector have received widely recognition from scholars that these linkages have significant impacts to technological development of ancillary industries of many host countries (Mead 1984, Hill 1985, Blomstrom and Kokko 1999). Such linkages have been recognized as important sources of growth in small- and medium-scale enterprises (SMEs) as a mechanism for promoting technology transfer through subcontracting relationship or inter-firm relationship (Wong 1991, Capannelli 1997). Inducements from substantial strict standard requirement by foreign firms in terms of quality, timely delivery, and cost down policy, drive local firms to improve their technical capability. However, the customer also has to impart some specific knowledge to its suppliers, hence, through this interaction, local suppliers are exposure to new knowledge and can have an opportunity to improve their capability accordingly.

Despite this growing recognition of the potential for accelerating technological development through buyer-supplier relationships, there have been surprisingly little empirical case studies of the actual situation and practice of how this relation can lead to such improvements. It is true that a vast body of study

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on technology transfer has been offered, but many of them focused only at intra-firm level, e.g. Teece (1977), Yamashita (1991), Ramachandran (1993), Urata and Kawai (1998). Lack of empirical research in respect of inter-firm technology transfer is one of major motivations of this paper.

In Thailand, as a recipient country of foreign direct investment (FDI), the government has exerted enormous efforts to attract FDI. Automobile industry is one of the target industries and has developed significantly due to government intervention (Doner 1991, Poapongsakorn and Fuller 1998, Abdulsomad 1999). Industry-wide has not developed only in the final assembly of automobiles, but also in supporting industries.[1] However, doubts still reside with people. They are skeptical and suspicious about the willingness to transfer technology by foreign firms. For instance, Ichiro Sato has commented Thai people as follow: "they are always anxious to have modern technologies transferred to their country, but they neglect to appreciate what technology transfer concretely and specifically comprises",[2] implying that Thai people may misunderstand the actual meaning and practice of technology transfer. They seem to view the topic as a once-and-for-all affair, but in fact, technology transfer is not and never characterizes in that way. It is rather a continuous process of knowledge accumulation and it normally takes time (Rosenberg 1982, Yamashita 1991).

Therefore, to improve understanding of Thai people, and hopefully those in other recipient countries, this study aims to contribute to the literature by doing research on a recent project of automobile assembly in Thailand at both intra- and inter-firm levels. Open-ended interviews and questionnaires were used in order to understand that to which aspects and by what methods were employed by a multinational firm in transferring manufacturing capability to an overseas project. Findings support that technology transfer is a complicated and time-consuming process. In addition, the assembler has had rendered technical assistance to suppliers, and inter-firm relationship with assemblers is considered as an important source of technological improvement by all suppliers.

The organization of this paper is as follows. Section 2 briefly describes the field research carried out in Thailand and characteristics of the sample firms. Section 3 presents research findings on a case of intra- and inter-firm technology transfer practices. Discussions on strategies of skill formation at both levels are based upon information disclosed mainly by and interviews with J-firm's staff. Section 4 concludes.

2. Analytical Framework and Source of Data

This study relies mainly on primary information. I conducted two field surveys, from March to May and from September to October 2000. After objectives were set to tracing technology transfer process in a recent automobile assembly project, called T-firm project,[3] the first step of this research entailed visiting factories and interviewing with staff of the selected firm, i.e. headquarter plant (J-firm) in Japan and the affiliate (T-firm) in Thailand. I visited T-firm and was able to interview with many staff of several departments. Information received from this survey clearly revealed that, in particular to this case, J-firm once decided to invest in Thailand, it had to accomplish transferring manufacturing capability not only to its affiliate (intra-firm level), but also to suppliers (inter-firm level).

This firm is appropriate for study because of two major reasons: firstly, among all new automobile assembly projects, this firm has the largest production capacity, and secondly, it set an ambitious goal to export Thai made products at the very early stage. With considerably large capacity and a goal to export, it would be discernible that considerable efforts would be allocated to develop production capa-

bility of local people and local suppliers. Hence, studying this firm would be able to offer a more appreciable explanation about actual practices of technology transfer by a foreign firm.

Based on findings from the first round survey, I construct a general structure of relationships between J-firm and the T-firm project (see **Figure 1**). It was discovered that J-firm had to create various relationships not only at intra-firm level, the relationship with its overseas affiliate (assembling firm, shown by the upper block arrow), and its part maker affiliate (if any), but also with all suppliers in Thailand. Relationships with suppliers are prevalent because J-firm wanted to ensure that all suppliers could achieve the required quality level and timely delivery schedule of the project. Expected benefits accruing to J-firm from this attempt are in forms of higher quality of parts or cost reduction, rather than monetary returns (like the intra-firm or arms' length case). However, information exchange taking place during this process might result in technological improvement in the recipient sides if they could adopt some of valuable information from their customers (Lall 1980, Wong 1991, Capannelli 1997). Given this possibility, this channel is called inter-firm technology transfer, which has been argued that contributions to host countries in term of technological development from this channel may be higher than other means (Blomstrom and Kokko 1999).

In addition, there were many suppliers, both Japanese and non-Japanese, that participated in the heuristic product development stage taking place in Japan. Some of them may already have a plant or joint venture agreement with a firm in Thailand, while some that received sufficient volume order may decide to set up a new facility. In either case, if they were approved to be a supplier for this overseas project, they would be responsible for building up manufacturing capability of firms in that host country. This is the main reason for the prevailing of this intra-firm linkage, represented by the lower block arrow of Figure 1.[4] However, this study is not directly concerned with this channel but gives more emphasis only on investigating two major parts, to the first, the main route of technology transfer that the assembler has created with its overseas affiliate, and to the second, with its suppliers. It is expected that by so doing this study can shed some light on a concealment aspect of contribution of FDI to host countries particularly in term of technology transfer.

From the first survey, I observed that J-firm had provided technical assistance to some suppliers in Thailand. Thus, the second round survey was conducted to extract more comprehensible information from the recipient side. I interviewed with T-firm staff again to get more precise information regarding intra-firm skill formation practices,[5] and requested for the supplier list. There are about 100 suppliers, consisting of 85 percent Japanese firms,[6] 10 percent independent Thai firms, and 5 percent non-Japanese firms. To avoid a sampling biased and to get overall picture how these firms accomplished preparation and were able to supply parts for T-firm, questionnaires were sent to all suppliers in September 2000. The questionnaire was required production, sales, and/or personnel managers to fill in. Main questions were designed to understand general information, characteristics of their relationship with customers and their technological capability status. Questions include how they acquired production technology, sources of technological improvement, what kinds of technical linkages J-firm had provided, and linkages with other customers.

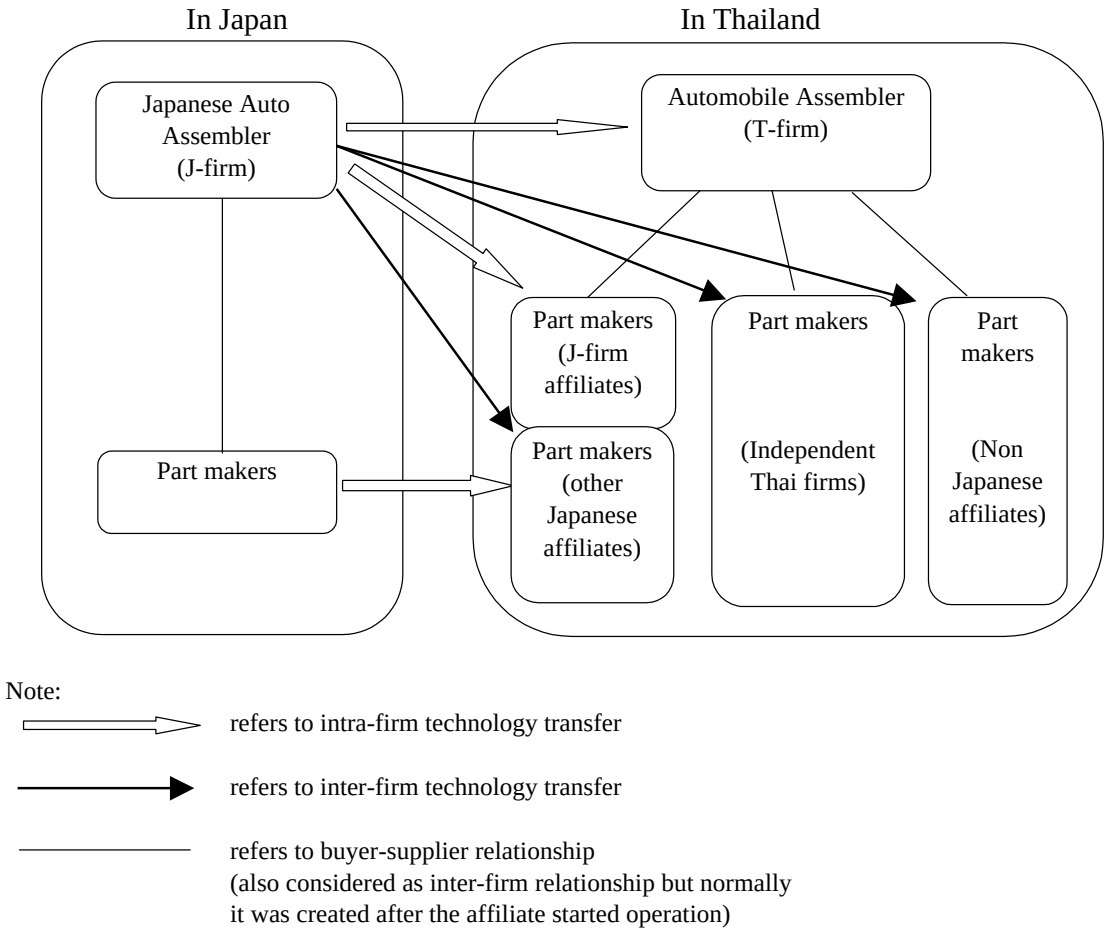

Figure 1 An Analytical Framework of Intra- and Inter-firm Technology Transfer

2.1 Characteristics of Respondents

From the total 100 sets of questionnaires sent to T-firm's suppliers, I got replied from 26 companies, making the response rate to be 26 percent. Following J-firm's classification, the sample firms comprise 19 Japanese (including wholly owned Japanese and Japanese joint venture) firms, four Thai firms, and three non-Japanese foreign firms. However, since almost all non-Thai suppliers are Japanese firms,[7] I will classify three ownership types, which are 1) 'Foreign' for firms with foreign ownership more than 80 percent, 2) 'Joint venture' for firms with foreign ownership between 20 and 79 percent, and 3) 'Thai' firms for otherwise. Characteristics of T-firm suppliers that replied the questionnaire are shown in Table 1. Among these, I could interview with managers (purchasing, sales, factory and production managers) of four suppliers

As shown in Table 1, ten firms (out of 26 firms) just established their production plant in Thailand in 1990s. Considered in terms of employment and sales volume, the majority of firms in my study are large firms. Almost all of them employed more than 200 workers and about half of them had sales volume higher than 500 million baht (in 1999 figure). Regarding export figure, only three firms currently

have no export, while the rests are exporting different percentages of their production. From the returned questionnaires, some of them just started export in 1998, representing adaptation of their policy to attenuate the downturn of the domestic market. In addition, concerning types of parts and/or services that these firms are supplying to T-firm, it appears to cover a wide range of products and technological requirement. Not only did it include system parts or marketed products, such as fuel tanks, exhaust system, oil pumps, water pumps, radiators, audio equipment, accessories, carpets, but also those assembly and/or sub-assembly and discrete treatment, such as transmission assembly, machining of engine gears, casting of engine parts, stamping parts, plastic injection parts. Given these varieties, it is expected that this study would be able to provide general information of inter-firm technical linkages created under the relationship between T-firm and its suppliers.

Table 1 Characteristics of Respondents

Type of firms	Foreign firms (12 firms)	Joint venture firms (10 firms)	Thai firms (4 firms)	Total (26 firms)
Establishment				
1960s	3	3	1	7
1970s	—	1	2	3
1980s	3	2	1	6
1990 - 1995	4	3	—	7
1996 onwards	2	1	—	3
Employment				
Less than 100	1	1	—	2
100 - 199	1	2	—	3
200 - 499	7	2	1	10
500 - 999	2	—	1	3
More than 1000	1	3	2	6
N.A.	—	2	—	2
Sales (in 1999)				
Sales less than 50 mB.	1	—	—	1
50-99.9 mB.	1	—	—	1
100-499.9 mB.	6	3	1	10
500-999.9 mB.	1	2	1	4
1000-3000 mB.	2	1	1	4
more than 3000 mB.	1	2	1	4
N.A.	—	2	—	2
Percentage of export				
0%	3	—	—	3
0.1 - 10 %	7	4	3	14
10.1 - 20 %	—	2	—	2
20.1 - 50 %	—	—	—	0
More than 50%	1	1	—	2
N.A.	1	3	1	5
Total	12	10	4	26

Source: Survey by the author, during September and October 2000
Note: N.A. = Data not available

2.2 Existence of Inter-firm Technical Linkages

The second-round survey's results reveal the existence of inter-firm technical linkages created by J-firm. Results indicate that only some of the sample firms had received some assistance from J-firm during the time prior to the launch of mass production for export, December 1998. Note that, there was a team, called 'supplier technical assistance or STA team responsible for creating such inter-firm linkages with suppliers, and the questionnaire was conducted to investigate this activity. Questions were asked all firms to report that during the concerning time period, 1997 - 1999, which types of technical support they received from J-firm. Answers can be classified into three types which are: 1) "received direct support", which refers to the case that suppliers report to have some Japanese STA staff working for a certain period of time at their plant during the period concerned; 2) "received only indirect support" or "getting only technical advice", referring to the situation that respondents answered to have received some forms of advice from STA staff; and, 3) "received nothing" is straightforward, referring to the situation that suppliers considered they did not receive anything from J-firm. As shown in Table 2, from 26 firms, only 18 firms reported to have received some assistance, either direct or indirect forms. Interestingly, among 18 firms, four firms explicitly stated that they have got direct assistance from J-firm during the period concerned, while the rest, eight firms, reported that they did not receive any assistance from J-firm (see Table 2 below).

Table 2 Number of Respondents Receiving Technical Assistance from J-firm

(Number of firms)

Degree of assistance \ Received by	Foreign firms	Joint venture	Thai firms	Total
Received technical assistance from STA team	2	1	1	4
Received only technical advice	6	7	1	14
Not at all	4	2	2	8
Total	12	10	4	26

Source: Survey by the author, during September and October 2000

According to interviews with STA staff, it was found that a real and explicit function of STA team was to support T-firm by monitoring all locally based suppliers to ship all ordered parts on time. In practice, STA staff had scheduled to follow up the progress of the preparation that suppliers had accomplished, by visiting each company from time to time, usually once a month. In many cases, they did only regularly 'company visits' and communication with suppliers to ensure that every thing was on track. Some suppliers that had only communication with STA staff might realize they were not receiving direct assistance but only indirect one. Indirect technical linkages include advice about quality control, maintenance, design drawing to make die or tooling, advice about project management, and lending equipment.[8] While those firms that could finish preparation by themselves and STA staff only did visit and check the progress, they indicated received nothing. Only four suppliers were found to have received direct assistance, i.e., a certain period of stay by STA staff.

For those 18 firms that reported to have received either direct and/or indirect assistance, Table 3 shows that all of them obtained advice about quality control practice and 12 of them reported to receive advice about project management practice. Nine suppliers got advice how to make and design drawings for dies and/or tolling necessary for producing parts for T-firm. Only few firms reported that their customers lent machine or equipment. These results in particular suggest that the J-firm's preferred forms

of technical cooperation that was mainly on information sharing.

Table 3 Technical Assistance Respondents Received from Automobile Customers

(Number of firms)

Types of technical assistance \ Received by	Foreign firms	Joint Venture firms	Thai firms	Total
1. Quality control practice	8	8	2	18
2. Maintenance	0	2	2	4
3. Design drawing to make die or tooling	4	3	2	9
4. Advice about project management practice	7	3	2	12
5. Lending machine or equipment	2	0	1	3
Total number of firms	8	8	2	18

Source: Survey by the author, during September and October 2000
Note: This table excludes eight firms that reported to receive nothing

After acquiring these results, I then reconfirmed with J-firm about STA activity and resources allocated for this purpose. This point will be discussed in details in the next section. However, it should note here that results from interview with J-firm staff and a set of disclosed documents indicate that STA staff had given substantial efforts to some suppliers. From information disclosed by J-firm, it was reported that there were two suppliers that had received largest amount of resources (about 80 percent) spent by STA staff, in term of person-months. However, in this paper, I attempt to explain the real practice of inter-firm technology transfer created by J-firm by relying on interview with and information disclosed by STA staff, see section 3.2.3.

3. Research Findings

Before proceeding to present research findings, it would be better to describe the objective of T-firm project in order to understand its initial objectives and its current situation, which would reflect how successful this project is. T-firm project is a project of pickup truck assembly established in the mid of 1995. A mission set initially was to "build and deliver world class quality vehicles and vehicle components in an efficient and timely manner to meet… customer's needs world wide" within the first year of operation. To achieve this goal, three priority tasks that J-firm had to accomplish before the launch of mass production of T-firm include, 1) to recruit and develop manufacturing skill of new employees, 2) to search for good suppliers that were already located in Thailand, and then 3) to keep close relationship with all suppliers in order to ensure that they could meet all deadlines scheduled for the T-firm production plan.

This project had quite limited time span given its ambitious goals. It was planned to run mass production in May 1998 and to export in December of the same year. From the beginning, there were only three and a half years to start production for export. As planned, the production for local market commenced in May 1998 with only 398 units and it cumulatively increased to 3,912 units in December 1998, while the production for export was totally 1,848 units at the end of 1998.[9] Until the end of 1999, T-firm could export totally 43,928 units and sold domestically 15,380 units. At present, it was reported that T-firm aims to export about 70% of total annual production capacity of 90,000 units. Hence, it seems clear how success this project is and why this firm is interesting to do research.

In following, this paper studies skill formation at two major levels (i.e., intra- and inter-firm levels) that J-firm had to take part in building up manufacturing skills. To make discussion more appreciate, as mentioned, I scope my study on a specific time frame, from the establishment of the project in 1995 to December 1998 when export began. This time frame also applies to the case of inter-firm technical assistance. Regarding resources allocated for T-firm project, this study focuses on duration of overseas training received by Thai staff and performed by Japanese staff.[10] Each activity will be separately discussed. First, I will present intra-firm practices, and next, move to inter-firm ones. In each part, I try to generalize the practice of skill formation process at both levels. Discussions were based on results of interview and questionnaire survey.

3.1 Intra-firm Technology Transfer Practice

Efforts to build up manufacturing capabilities of T-firm firstly started in August 1995, when the first group of Japanese staff was delegated to take care of the project.[11] The training plan for local employees was complete early February 1996. The plan was to promote and build up skills of local workers in all classes necessary for the efficient mass production. According to documents disclosed by J-firm, training practices for T-firm employees were carried out in the following manners. Japanese staff were delegated to prepare training courses for Thai staff coming to receive training in Japan. Not only being trainers, but in many cases they were also assumed a superior position to their trainees. After training in Japan completed, they together with Thai trainees went back to T-firm to prepare for launching mass production. Until the end of period concerned, December 1998, totally 83 Japanese staff had been training local staff in Japan and working at T-firm in Thailand.[12] Training courses consisted of three major aspects, which were production, quality assurance and production control. Resources expended by Japanese staff for this purpose, were in total 2,136 person-months (see Table 4).

Table 4 Total Time Japanese Experts Train T-firm Employees

Workplace / Type of technical assistance	Training at HQ plant in Japan	At T-firm	Total (person-months)
Production	543	674	1217
Quality assurance	199	460	659
Production control	74	186	260
Total	816	1320	2136

Source: Calculated from Information of J-firm

In the part of Thai staff trained in Japan, 187 core members, which were the first group of recruited staff, including production managers, assistant production managers, engineers, supervisors (or foremen), leaders, and technicians (including operators and staff), were scheduled to receive training at the headquarter plant. These staff were sent to Japan from time to time in accordance with the schedule set by the J-firm's master training plan. These members were expected as inexperienced labor forces, presumably due to specific manufacturing characteristics of J-firm. Hence, training these staff had been the most important key to guarantee a successful launching. In total, these staff had received training in Japan 1,549 person-months, on average 8.28 months per person, see Table 5. However, managers, assistant managers, engineers, and supervisors, who would not involve in direct operation, had received longer training duration than those responsible for direct production, indicating how crucial J-firm considered in building up these people skills.

Table 5 Total Time Thai Trainees Trained in Japan: Classified by Positions

Position	No. of staff	Time (person-months)	Average
Production managers	8	84	10.5
Assist. production managers	8	68	8.5
Engineers	31	309	9.97
Foremen	35	292	8.34
Leaders	20	146	7.3
Technicians, operators, staff	85	650	7.65
Total	187	1549	8.28

Source: Calculate from Information of J-firm

Generally, when thinking of a transfer of a production process to an overseas facility, one may envisage only simple assembly or operational skills, which may be misleading. At least, as shown above, results of T-firm project suggest that in order to be efficient in production of automobiles various skills must be promptly promoted. What kinds of skill have been formed up can be seen in Figure 2. Before these workers were sent to Japan, they had been appointed to take care of ten different types of technical aspects. However, from total person-months of training, it seems that J-firm gave more emphasis on six technical aspects, which are press shop, quality assurance, maintenance, body shop, paint shop, and final assembly shop. All of these are the main functions for automobile assembly. It was observed that staff in charge of maintenance and quality assurance received on average longest training in Japan. These capabilities are very critical in determining the smoothness of operation thereafter.

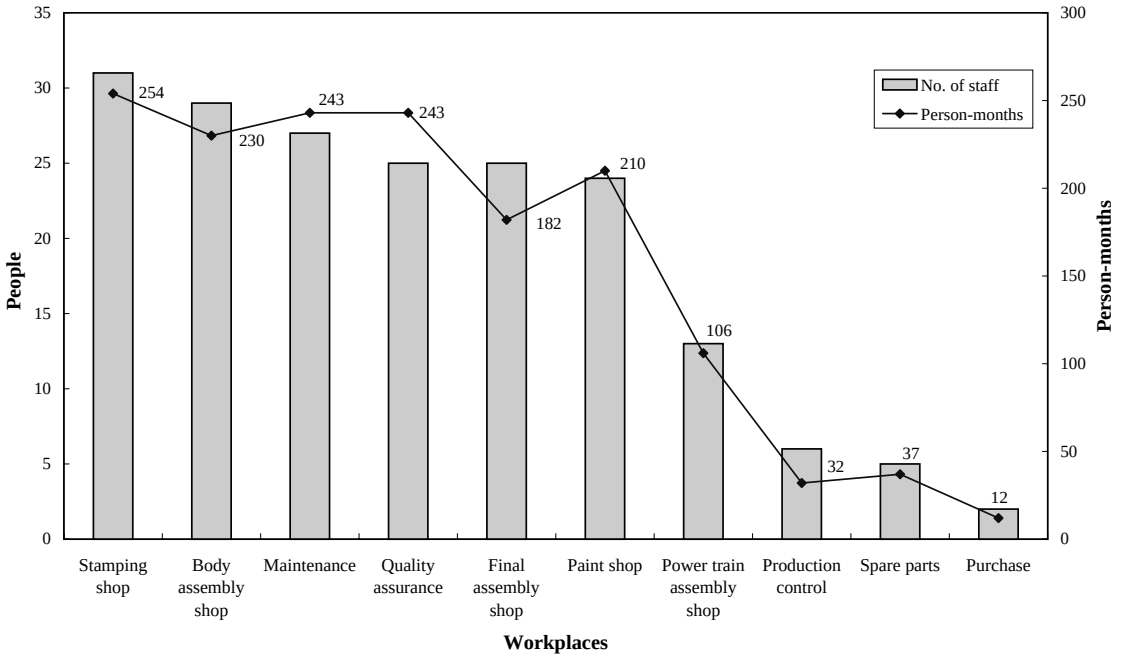

Figure 2 Thai Staff Trained in Japan: Classified by Workplaces

3.1.2 J-firm training strategies

Presenting only how many resources expended for T-firm project in forming up local employee skills may not be appreciate without discussing how J-firm successfully accomplished this task. It was found that at the very early stage the most important strategy to impart manufacturing skills was to create "multipliers." A "multiplier" is a staff in any production department that was trained and evaluated to be capable of training other staff in that area of works. Probably it was because of a very limited time span for the project, a more promising way was to produce as many capable staff as possible from the beginning. Specifically, training target stipulated by J-firm has three levels as follow:

Level 1: be able to carry out the basic operation in accordance with a trainer's instruction;

Level 2: be able to carry out the production operation, *being a trainer for the on-site training* and being a trial member for the machines in accordance to a trainer's instruction; and

Level 3: be able to carry out production operation, kaizen (continuous improvement) and *training newly hired employees*.

Regarding definitions given above, the skill of employees would be accumulated from level 1, 2, and 3. In other words, a higher level attained by a trainee indicates the higher skill level and capability of the trainee. In order to achieve this goal, J-firm consider that training would not be success if language barriers were not reduced. With a paucity of language difficulty, all core members were assigned to study Japanese language about six weeks. Interview results with these members proved the significance of this course as it helped them to understand and improve communication with Japanese trainers. In addition, among the first group of core members, production managers and assistant managers of each department were sent first. Their priority duties, after learning Japanese language, were to develop training manuals concerning their department. As they aware of the language barrier, these members worked out translation these manuals into Thai language, in order to deploy them efficiently afterwards.

Taking one example of the power train assembly section,[13] a Thai manager reported that he and another engineer were in the first group sent to Japan. They worked very hard in translating training course written in Japanese into Thai language. Support in forms of translators, each took care of 10 trainees, and related English documents during this stage were of crucial in determining the success of this preparation. What each Thai manager would do was to thoroughly consider how all required tasks would be codified into Thai language so that their subordinates who came later could understand and be able to perform these tasks efficiently. He, as well as other managers, not only had to prepare for every single station of engine assembly, but also to consider how to set a quality system in order to be best control the actual production. To be sure, Japanese trainers played a pivotal role in this process.[14]

Translated training manuals developed by each department were utilized according to the curriculum to train employees who followed. These documents were utilized in training basic and technical skills necessary for each department. Also, the on-the-job training (OJT) practice was extensively adopted to make trainees understand exactly their responsible duties. This is because specific (or tacit) skills of J-firm staff are in nature hardly to articulate. In addition, due to language problem, difficulties and ambiguities remained when insisting to rely only on codified documents like production manuals. These problems can be overcome when the communication takes place in a face-to-face manner. Errors or misunderstandings can be promptly corrected by personal feedback.

However, learning from such codified documents and using OJT practices might not lead to successful skill formation. By nature, learning is a mechanism necessary for transforming codified knowledge to tacit knowledge of individuals or firms (McKelvey 1998), and the process takes time (Rosenberg

1982). A prudent way would be to assess the trainees' ability whether they sufficiently accumulated expertise from the training or not. According to the J-firm plan, all trainees would be evaluated to acquire manufacturing skills step-by-step from being able to perform tasks under supervision of a trainer (level 1), to be able to perform operation tasks by themselves and able to train new workers in their work stations (level 2) and to be able to carry out production, make improvement, and train newly hired workers (level 3), except those staff in class skilled operators and maintenance staff (see Table 5) were required to obtain only "level 2".[15]

The assessment was done by requesting all trainees to articulate their understanding over aspects they were trained. This method was proved as an important impetus for completing the skill formation process during this stage. According to the interview results, Thai staff had praised high evaluation to this scheme in that it was a good way to elicit their efforts in order to understand clearly what the verbal or codified knowledge (training manuals) is, and how to perform their responsible tasks efficiently. Following this criterion, Thai trainees reported that they became clearly understand the technical knowledge of J-firm and being able to train lately employed staff.

About 75 percent of the core members as well as their trainers came to Thailand in September 1997, when T-firm was preparing for launching first trial production in October. All members, both Japanese and Thai staff, worked together in this process, and, at the same time, they were responsible for training new employees. However, for Thai staff, only the core members participated in the preparation of first and second trial production. New employees took part in only from the pre-mass production and mass production in May 1998. Based on the schedule to export in December 1998, more employees were recruited and trained. Training new staff was accomplished mainly through the OJT basis. After one or two days of general training, about the company policies, new workers would be immediately transferred to the department they will later on work for. Each department has its own training courses but generally it was done exclusively through OJT.[16]

These findings, to a certain extent, shed some light on how costly the process of technology transfer is, and what kinds of activities were promoted and by what mechanisms during the early stage of a new project. Though relying upon only one intra-firm project, results show how complex and multi dimensional skills that this technology source must transfer to local employee if efficient mass production is the ultimate goal. Management of technology transfer is not an easy matter. Success cannot be determined only at the beginning but also afterwards. Roles of local people and Japanese staff in continuous improvement are strongly important. Hence, skills are continuously transferred, suggesting that technology transfer process is never end.[17]

3.2 Inter-firm Technology Transfer Practice

3.2.1 Supplier technical development program

To assure that all suppliers would be able to produce and supply parts in accordance with the project schedule, a special team, called "supplier technical assistance" (STA) team, was set up to take care this task. The STA team was sent into Thailand to monitor and evaluate all suppliers manufacturing capability. After gathering information from factory visits, they could distinguish firms between capable and probably incapable ones. They had to keep close monitoring on suppliers that were new to J-firm, i.e., those that had no business relationship with before, because these firms might not be quite familiar with specific manufacturing techniques of J-firm. The STA master plan was concluded in September 1996, and 33 core members were delegated for this purpose. These members were appointed to support three

major technical areas, which were forging/casting of power train and engine parts (13 people), trim parts or interior parts (seven people) and stamping of body parts (13 people). The length of period of supplier technical assistance program was from January 1997 until January 1999.[18]

Not all members worked full time in Thailand for supporting locally based suppliers, however. Some worked as a support team while staying in Japan (denoted as 'Home service employees'; HSE), some temporarily served direct support to suppliers (denoted as 'International service specialists'; ISS), and some stayed long-term in Thailand to work with suppliers (denoted as 'International service employees'; ISE). These three classifications were taken from J-firm criteria in which STA staff were divided into three major types, according to geographic boundaries and duration of stay. Job descriptions were as follows:

1. HSE were those who stayed in Japan and were delegated to give support to T-firm project. In other word, HSE staff were standby to provide coordinates and to conclude what types of assistance or which people would be sent to support T-firm suppliers.

2. ISS were staff who, at that time, were actually working full time for J-firm in Japan but were delegated to give technical support to suppliers in Thailand. They had a specific schedule to go back and forth Thailand and Japan, and period of stay was short term, less than one year.

3. ISE were staff who were designated to provide technical assistance to suppliers in Thailand, as same as ISS. However, the period of stay in Thailand was longer than one year.

These staff were obliged to provide technical support to suppliers and to assure their production capability because these firms would supply parts incorporated into T-firm's export vehicles. Totally 333 person-months were spent by STA staff, see Table 6, and assistance to suppliers in area of body parts appeared to be highest in term of total person-months, followed by interior parts, and power train & engine parts.

Table 6 Person-months of Japanese Staff Providing Technical Assistance to Suppliers in Thailand

Type of staff / Technical aspects	HSE	ISS	ISE	Total (person-months)	Average
Forging and casting parts	12	27	36	75	5.77
Trim parts	38	18	49	105	15
Stamping parts	21	82	50	153	11.77
Total (person-months)	71	127	135	333	
Average	5.07	9.77	22.5		10.09

Source: Calculated from Information of J-firm
Note: HSE, ISS and ISE see definition in text.

This table shows that resources were allocated unevenly among three main categories; however, it cannot tell what factors determining such allocation. According to Samli (1985), a technology owner will do transfer any technology if it 'wants to' and 'is capable' to do so. Hence, in the situation that J-firm, as a technology source, had deliberately set up STA team in a sense may imply that in which areas of technology J-firm is specialized in. Nevertheless, to be sure, it needs additional information especially on the receiver side. The next subsection will discuss about roles of STA staff in assisting suppliers to accomplish the preparation process.

3.2.2 Inter-firm technical linkages

As just shown, STA resources were concentrated in three specific technical aspects. However, a remaining question is what determines such concentration. Taking a clue from Clark and Fujimoto (1991), we may be able to answer this point. In their comparative study of product development performance among Japanese, USA, and European car makers, they observed that on average reliance of Japanese assemblers on supplier involvement in the process of product development is as large as 70 percent of total purchased parts, indicating that only some fields that the assemblers have expertise. According to their study, parts can be divided into three major types; namely supplier proprietary parts, black box parts, and detail-controlled parts. Japanese assemblers usually have capability to carry out all development stages - from basic concept, draft drawing, prototype making, testing, approving and producing only the last type - detail-controlled parts,[19] while the first two types they rely on engineering capability of suppliers. Hence, when some detail-controlled parts were subcontracted out, the assemblers would be able to provide useful information to suppliers whenever necessary. Therefore, in this respect it makes clear then that J-firm can provide assistance in only some technical aspects that it actually has specialization.

3.2.3 STA's training strategies[20]

This part will describe the nature of STA's training plan. It includes strategies of STA team, i.e., objectives of assistance, targeted suppliers, and support methods. According to initial objectives of J-firm, it required that suppliers would have to succeed in preparing for production in accordance with the master schedule. And, the main responsibility of STA team was to assure that all suppliers would be able to supply parts for the launch of mass production of T-firm. Hence, a fundamental role of STA team was to monitor suppliers from timely schedule set in advance. In other word, STA staff were doing mainly "company visit". But by doing so, they had to have conversation with suppliers' staff (i.e., a designated responsible team). In the circumstance that suppliers had enough capability to prepare for the order, either because of they were capable or they could get support from their foreign parent company, STA team would not have to exert any effort other than routinely visit, communicate with suppliers' employees, and monitor the overall preparation processes. However, for some suppliers that revealed a possibility of delay, either because of lack of specific technological capabilities or absence of a foreign partner to provide intra-firm support, the STA team had to directly create direct linkages.

In general, the STA team was to observe and monitor seven major steps of activities that each supplier had to achieve step-by-step in order for the successful launch of mass production, which are: 1) management plan for overall project, 2) design of manufacturing process, 3) design and make tooling, 4) design and make jigs and fixtures, 5) design and prepare for the production facility, 6) operating actual mass production, and 7) control and improve productivity. From the beginning until the mass production, it had been the sole responsibility of STA team to monitor and ensure that all suppliers were able to prepare all these processes. In short, the main function of STA, if it was necessary to provide assistance, was to fill in some technical capabilities that suppliers lacked.

In the case of direct support, STA staff reported that linkage creation was aimed at suppliers that were lack of management and specific technical capabilities. And technical support was initiated from the first, management capability, to the last, being able to run and control quality in mass production. The project management is of crucial in determining the success in preparation, because inappropriate planning would lead to inefficient preparation of production process, equipment, facility, and so on, and then

the overall project would suffer a setback from delay of few suppliers. This is explaining why inter-firm technical assistance proceeded from the first to the last step. Direct efforts were accomplished by sending a number of STA staff to work at the suppliers' factory for a certain period of time. Support was provided on the job basis.[21] STA staff reported that in order to improve the management capability of these deficient suppliers, they requested them to set up a team to be exclusively responsible for the T-firm project. This is the first step to make sure that all preparations and assistance they provided would lead to a progress of the project. After that, they assisted the suppliers to design the manufacturing process, tooling, dies, and to prepare for the production facility such as set up the machine, confirm quality standard, and to confirm the tested production lot until these suppliers were able to produce and deliver good quality of parts to T-firm.

From the above explanation, it showed that deficient suppliers lacked well-systematical project management and some specific areas of technology required to produce J-firm parts. Hence, it can be argued that the priority task of the STA team was to establish a *systematic management system* necessary for the preparation of their project. In addition, due to time limitation, the most promising way of skill promotion was through the OJT basis. By employing OJT, STA staff could understand the actual situation, and then could determine the source of problems that needed to be corrected. Close communication with suppliers' staff could enhance the efficiency of skill transfer because face-to-face communication improved the quality of information flow.

My findings indicate that the main technical aspects that STA staff would be responsible for giving support lie mostly in the first five steps explained above. This is because of the fact that the sixth and seventh steps, to operate actual mass production and to control and improve productivity, could not be attained, at least by the schedule of T-firm, without direct support by J-firm. The first five steps or capabilities were prerequisites for successful mass production afterwards. Once the mass production could successfully start, technical support by STA staff would come to an end. Then, suppliers take sole responsibility to maintain and even to improve their production productivity by themselves later on, if they wish to sustain the future business with T-firm.[22]

4. Conclusion

In this paper, I have discussed actual practices of technology transfer which took place in a recent automobile project in Thailand. By looking at one project, this study found that substantial amount of efforts in promoting technological capabilities of local workers and suppliers were allocated. Findings of intra-and inter-firm practices support to Yamashita's "nine-stage of technology transfer" hypothesis, explaining that technology will be transfer from lower to higher level, and the process never ends. It was discovered that the first four levels of technology, in Yamashita's "nine-stage" model, were likely to be promoted simultaneously but an easier competence must be comprehended before the higher ones. In accumulation of such skills, OJT was an effective way at both intra- and inter-firm levels. However, at the intra-firm level, a criterion of evaluation employees' skills adopted by J-firm (explained in section 3.1) seems to have positive effect on the effectiveness of the skill formation, while to implement this practice at the inter-firm one was beyond the authority of J-firm.

Regarding technology transfer at the inter-firm level, resources were unevenly distributed among suppliers. Based on my findings, I may conclude that inter-firm technology transfer is essential for automakers but resources allocated for this purpose would concentrate in areas that the source has spe-

cialization, and lower capability suppliers are likely to receive higher amount of these resources. As the actual STA technical assistance practices presented in 3.2.3, it was observed that technical problems lie on two major areas, on the one hand, the specific technical requirement of the order itself, and on the other hand, the systematic management of the production activity. These two capabilities were not easy to observe at the early stage of search and evaluation done by J-firm. Hence, after specific relationship has been created and problems were evident, technical assistance was necessary and method of imparting skill to suppliers was to fill in technical aspects that suppliers were lacking and to create a more systematic preparation system.

Although inter-firm technical linkages can be regarded as an important means to improve technological capability, suppliers need to be aware of the importance of their internal efforts aiming at improving their technical capabilities. As suggested by Cohen and Levinthal (1989), investment in enlarging technological capability will make learning from outside (such as inter-firm relationship) becomes more likely and easier. Without conscious resource allocation, not only are benefits deriving from inter-firm relationship becoming irrelevant, but also internal improvements are hardly to achieve. Although this study focused only to a specific case, it can provide relatively new and inside information of the transfer process. More efforts should be done in this area by taking a larger number of firms or by studying other industries.

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[1] The industry is under restructuring process due to a drastic change in environment in recent years. See discussions in Thamavit et al. (2000) and Poapongsakorn and Wangdee (2000).

[2] In Yamashita (1991: 237)

[3] This is a joint venture project between a Japanese (J-firm) and an American firm (A-firm).

[4] "Intra-firm" technology transfer at the supplier level should also have significant influence on the nature and degree of inter-firm technology transfer created by the J-firm, because it is responsibility of foreign suppliers in building up their affiliates or partners in Thailand. In other word, this represents 'technological opportunity' to acquire specific production knowledge for preparing the order. However, this study is not directly concerned with this aspect, as it is beyond the scope of this study. Analysis on this aspect will be offered in another opportunity. For explanation about the effect of foreign ownership on degree of technology transfer, see Ramachandran (1993) and Urata and Kawai (1998).

[5] In addition, I was able to interview with three automobile assemblers. These interviews were to observe and compare general information about intra-firm technology transfer practice.

[6] Including 100 percent and Japanese joint ventures that use Japanese technology.

[7] There were only three non-Japanese firms replying the questionnaire, one is 100 percent owned by USA company, one by a French company, and the other one is a joint venture between French and Thai company.

[8] These inter-firm technical linkages were adopted from Hill (1985) and Kriengkrai (1997)

[9] In fact, mass production for export started in November 1998 in order to export the first lot in December 1998 as scheduled.

[10] For Japanese staff, it includes time spent in training Thai workers in Japan and in Thailand during the period concern. This idea was based on theoretical concepts and Ramachandran's (1993) in that resources expended on internationally transfer of human resource between the source and the recipient in order to bring the technology on line.

[11] Indeed, right after the project of T-firm was established, planning for construction, equipment installation, supplier searching and training plan were set up in accordance with the overall project schedule. However, results presented here were based only on activities relating to training or skill formation.

[12] At the end of period concerned, 80 Japanese staff remained working at T-firm.

[13] Information was drawn from interview with a manager of T-firm, in October 5, 2000. Note that, he was a core member in engine assemble department.

[14] Interview with two managers, one from production engineering and the other from paint shop, in March 13 and 23, 2000, also reflected a similar view. They stated that Japanese trainers always asked them to perform almost all related tasks, even a simple job like turning a screw of bolts and nuts. Underlying objectives were that, in their opinion, the trainers would like them to understand the actual work environment their subordinates will perform. And, they acknowledged that by doing in that manner, they could take all details of work into account when writing training and production manuals.

[15] Skilled operators and maintenance staff usually have to engage in daily operation so at the early stage they were required to achieve only "level 2". However, in a later stage, they were encouraged to acquire "level 3", as an incentive scheme of career path promotion.

[16] In some departments like trim and final and engine assembly, new operators would receive training their job through the use of 'training jig' located next to the production line. Trainers - experienced operators, line leaders or

supervisors - teach how to perform tasks. This process usually takes about one week or less, then new workers will be transferred into the production line where OJT really takes place.

[17] Interviews with managers of other three automakers also support this view. Interviews were done in September and October 2000.

[18] Note that, STA program was ended one month after the export schedule because J-firm wanted to assure that all suppliers were capable to supply good quality parts. Thus, the time frame of analysis will extend to cover this addition month as to include those resources spent by J-firm.

[19] Of course, core technological parts like engine and transmission, and concept design would also be performed in-house.

[20] Information in this part is based on my interview with a leader and four core members of STA project in February 20, 2001, from 14:00 - 16:00, and on the results questionnaire survey and interview with some suppliers in Thailand, during September and October 2000.

[21] Interviews with STA staff and two corresponding suppliers that replied the questionnaires confirm this fact. However, I would like to postpone detailed discussions about how J-firm accomplished technical support to these two firms to the future occasion.

[22] This is confirmed by information obtained from J-firm and interview with STA staff.

＊本誌の論文は、レフェリーによる査読を経て、掲載している。

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