



NATIONAL WATERSHED MANAGEMENT POLICY

Ministry of Environment and Natural Resources
Sri Lanka.
July 2004

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Ministry of Environment and Natural Resources
“Sampathpaya”
Rajamalwatte Road,
Battaramulla,
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BACKGROUND

1. Protection of watersheds, the home of key natural resources, has been one of the basic elements in land management from the inception of the hydraulic civilization of this country. But with the plantation economy in the 19th century, this element has transformed. However, the importance of the preservation of watershed areas was recognized as far back as 1873 when a decision was taken by the colonial government to preserve the area above the elevation of 5000 ft. Early attempts such as the restoration of ancient tanks in 1930s, construction of new reservoirs and hydropower generation in 1950s, 1970 and 1980s allocated large extents for catchments protection. The Land Commission 1955 recommended that the forest reserves should be demarcated to preserve the watersheds and upper catchments. The Water Resources Board Report (1969) stated that damage to watersheds is the destruction of natural 'store houses' of water conservation.
2. The subject of watershed management has been addressed in Sri Lanka, implicitly though, at initial stages and through a number of foreign funded projects in seventies through nineties. These projects addressed only few particular issues and lacked a holistic approach. The National Environment Act No 47 of 1980, required the Central Environmental Authority to recommend soil conservation programmes, identify and protect critical watershed areas, encourage scientific farming techniques and the use of physical and biological means of soil conservation and, conduct research and develop technology for

effective soil conservation with the assistance of the Ministry in charge of soil conservation. The third Land Commission 1985 has studied the subject of watershed management in great detail and its first interim report had entirely been dedicated to watershed management.

3. Agenda 21 adopted in Rio-de-Janeiro by United Nations Conference on Environment and Development in 1992, described watersheds as fragile ecosystems with mountain environments as essential to the survival of the global ecosystem. Hence the need for sustainable development of mountain ecosystems, promoting integrated watershed development and alternative livelihood opportunities. Nearly half of the world's population is affected in various ways by the degradation of mountain ecology and watershed areas. Globally there are many examples for rapid deterioration of land resources in uplands.
4. In 1994, the government revised the National Environment Action Plan recognizing the importance of effective conservation and management of sensitive watershed areas and suggesting policy directives. Sri Lanka has adopted a well-founded policy for forest conservation, management and development in 1995, and a wildlife policy 2000, which cover a major component of watersheds of the country. The National Physical Planning Policy 2002 strikes a balance between protection and production by rationalisation of land use in the central region where the prime watershed of the country exists. Mobilising resources to conserve highlands and catchments is the statement connected with watersheds in the National Agriculture and Livestock Policy 2003. Proposed policies such as the Land Use Policy, Water Resources Policy, Environment Policy etc, have included watershed management as an essential component of

respective policies. Natural forest has been recognized as the best cover for soil and water conservation and the forest categorization included natural forests in the classes of strictly protected forests and conservation forests. The classification of wildlife areas in the National Wildlife Policy is to maintain ecological process, with particular regard, to hydrological balance and prevention of erosion, siltation and drought.

5. It is the Upper Watershed Management Project launched in 1998, that addressed the problems in watersheds directly and in a holistic manner for the first time. The Consultancy fielded by the UWMP in 1999 for policy analysis, reviewed the relevant statutes related to watershed management, and proposed valuable amendments thereto.
6. National Physical Planning Department has recognised the value of protected areas in physical planning in the preparation of the Policy 2002. River Basin Planning & Management Division of the Mahaweli Authority of Sri Lanka has prepared a model basin plan (2003), recognising the importance of the watersheds of cascades. Water resources management is the management of water as a resource, and watershed management is the management of the resource base. The current policy document is prepared in this backdrop.
7. The foremost statement of the National Environment Policy 2003 is that resources such as land, water, air, minerals and biodiversity will be managed in a manner consistent with viability of ecological progresses. The institutional frame work for sound environment management will be strengthened through capacity building legislation instruments and improved institutional co-

ordination and linkages. Environment and its management are illustrated in the National Environment Policy and the Natural Watershed Management Policy need to pick up their in developing policies and formulating strategies required for watershed management with regard to land, anticipated achievement in the Natural Environment Policy interlaid is to provide special protection for highly erodible areas and areas prone to landslides and other hazards. Practice that lead to land degradation should be prohibited even in private lands. Catchment of important river systems and other water bodies are to be protected through maintaining existing natural vegetation and adopting other conservation measures. Management of catchments areas of rivers for good infiltration and sediment free run-off stipulated in the Natural Environment Policy can only be ensured with good management of watersheds.

8. The policy expressed in the “Fivefold vision for future of our motherland , 2004” is to undertake rapid reforestation of all gradient precipices mountain crests and essential land including especially watershed areas, and to take legal steps to make them reserves. It is also provided in the policy to establish committee at various levels for the purpose of protection environment. The policy has taken the theme that the substance of the commercial life and development of this country depends on the conservation of environmental resources for longtime use as the base policy. Emphasis on environment management is explicitly reflected in the strategies articulated in the Economic Policy Frame work of the Government of Sri Lanka. Action plans prepared by the Ministry of Environment and natural resources are to follow this framework.

PREAMBLE

1. Watershed is a geo-hydrologic area, which catches stores and discharges water through common drainage point and bounded by a ridgeling. They are of varying sizes depending on the drainage point selected; a micro watershed area is the area drained by a first order drainage system, while a river basin is a large watershed by a multitude of tributary streams of the river. Watersheds lying above he 300 m msl of this country are the critical watershed, which cut across the boundaries of provinces, districts and all administrative limits requiring immediate attention. Out side this area lie scattered catchments of tanks, lakes, rivers and streams in all agro-ecological zones of the country as watersheds. Rivers, streams, marshes, forests, rocks, patanas, mountains and varying climatic conditions are the natural features of the watersheds. Various natural resources in the watershed, such as land, water, forest, wildlife, minerals etc. cannot be managed individually or in isolation because their existence is interdependent.
2. In accordance with the Directive Principles of State Policy in the Article 27(14) of the Constitution of the Democratic Socialist Republic of Sri Lanka, nature has to be protected, preserved and improved. As per Article 28(f), the exercise and enjoyment of rights and freedoms are inseparable from the performance of duties and obligations, and accordingly, it is the duty of every person in Sri Lanka to protect nature and conserve its riches. Watersheds being the most essential components of the nature have to be thus held in trust for the people by the State. The protection of watersheds needs its due place in the enforcement of the law of the country with more sympathy on watersheds than on individuals who damage them.

3. Policies are required mostly for the conduct of human intervention in natural resource areas of watersheds. Government approved policies help decision-making bodies to take transparent decisions and reverse trends as appropriate in relation to desired development objectives.
4. All lands in these areas cannot be brought under agricultural and other productions. Some lands have to be protected to achieve certain conservation objectives from the point of view of land use. Watershed is the naturally endowed land use. Today watershed management is emerging as a distinct discipline because it has to play a managerial and coordinating role linking land, land use, forest, water, wildlife, agriculture, irrigation, hydro power, road development, constructions, legal etc, rather than concentrating on one natural resource. As illustrated in the National Physical Planning Policy 2002, if the constraints on the efficient use of land can be removed, many policy issues can be resolved.
5. Investment on watershed management today is costly. But if investment on watershed management is postponed today, the resultant cost on remedial land curative activities will be hundred times tomorrow as proved by empirical evidence. Such cost cannot be met by government alone in the future. Therefore timely investment by the State on watershed management has to be ensured.

RATIONALE

1. Watersheds contain a number of natural resources, the protection, conservation, proper use and the management of which determines the well being and the livelihood of a great majority of the country's population.

2. Although there are a large number of sectorial policies, acts and regulations designed to protect the different natural resource sectors, such as land, forest wildlife and crop-lands it is evidenced that most watersheds in the country are being degraded at a rapid pace, mostly due to the lack of a overall policy on total watershed management and the absence of a proper integration of polices, strategies, programmes and activities among and between the different sectors.
3. It is recognized that most critical watersheds are located at higher elevations commencing around level 300 m msl.
4. In a large majority of watersheds irrespective of their size, two segments can be recognized; (i) segment that holds the natural resources and service the lower segments and (ii) the lower segments that make use of the resource made available from the upper segment for economic development i.e. irrigation of lowlands, hydro-reservoirs for power generation etc. make use of water that comes down from upper segments of watersheds.
5. Correct valuation of services rendered by the upper segments of watersheds from our well being is considered essential and accounting of the disastrous consequences arising from inadequate protection, lack of emphasis on conservation and the poor management of upper segments, in monetary terms is very well recognized.
6. A policy on watershed management seems essential to stream line policy implementation by the individual sectors and to complete integration of sectoral policies for total watershed management.
7. For the management of upper segments of watersheds to ensure the sustainability of the development in the lower segments as well as for the protection of values such as

biodiversity, water resources, aesthetics and environmental quality, adequate investments on the upper segments are essential.

8. To overcome some of the deficiencies in the implementation of relevant acts, and regulations designed to meet the sector policy objectives accepted by State, and to ensure acceptance by the people, it is essential to empower the dwellers of the numerous watersheds to demand proper watershed management.

PRINCIPLES

1. Benefits of the resources in watersheds made available to the people of this country in past must be sustained and enhanced for the benefit of future generations.
2. All life forms have the right to a share of the resources in watersheds to derive sustenance, living space and well-being.
3. Every citizen born in this country has the right to use the natural resources in watersheds in a sustainable manner but none has the right to degrade the resources and prevent future generations from using them.
4. Traditional values and customs held by our ancestors with respect to rivers, water bodies, rocks and mountains that have led to the protection of the natural resources in watersheds and the ecosystems in general should be given their due recognition.
5. In the absence of suitable alternatives to subsist or sufficient means of living, people are compelled to encroach upon critical areas of watersheds to derive their sustenance. Therefore there is a direct linkage between watershed degradation and poverty.

6. People's involvement and participation in the management of watersheds play an important role in the conservation, protection and management of watersheds.
7. A watershed is a national asset which cuts across all anthropogenic boundaries and hence it deserves its due place in the conservation and protection of natural resources of the country.
8. All citizens are expected to respect the law of the country and not to demean it and the non compliance by certain elements with social and other status, causes much damage to water sheds.

POLICY OBJECTIVES

1. To conserve, protect, rehabilitate, sustainably use and manage the watersheds while maintaining their environmental characteristics with the involvement of people.
2. To rationalise investments through continued provision of funds in the national budget or otherwise, on sustainable watershed management by evaluating the services provided by watersheds.
3. To co-ordinate and monitor all activities in watershed areas and secure a system of integrated management.

GOAL OF THE POLICY

Accruing sustained and equitable economic and social benefits to the people and other life forms within the watershed in particular, and in general to the whole nation while ensuring the long-term protection of the natural functions to the watersheds.

2. POLICIES ON PROTECTION

- 2.1 Watersheds or segments of watersheds be classified as strictly protected watersheds and protected watersheds.
- 2.2 All encroached and disturbed lands in critical water sheds in the central highlands be surveyed and demarcated and recovered where appropriate.
- 2.3 Individuals and Institutions be held responsible for the protection of hydrologic reservations and for the implementation of existing provisions in all current enactments and regulations in force and any new provisions that may be made from time to time. Failure to implement regulations be considered an offence against the State.
- 2.4 All undeveloped , steep and sensitive lands situated above 1500m msl, shall not be released except for conservation purposes or strictly for natural restoration.
- 2.5 High risk landslide prone areas be declared as strictly protected areas and medium and low risk areas as protected areas.
- 2.6 Effective environmental practices of traditional, cultural, religious and aesthetic values be recognised.

3. POLICIES ON CONSERVATION

- 3.1 All agricultural practices with conservation measures including the selection of crops, cropping patterns and land and water management in critical watersheds be according to the guidelines issued

under the Agrarian Services Act, Soil conservation Act and any other Act that may seem relevant and the policies of the Draft National Land Use Policy.

- 3.2 Incorporate appropriate mitigatory measures in the implementation of development activities in watersheds.
- 3.3 Compliance with existing laws and regulations be ensured at all times to prevent further degradation of critical watersheds.

4. POLICIES ON MANAGEMENT

- 4.1 Promote and strengthen communities/ stakeholders to manage their respective watersheds ensuring equity.
- 4.2 Create awareness and consciousness among communities/ stakeholders and promote commitment for sustainable watershed management through participation and partnership.
- 4.3 Facilitate a holistic approach to Watershed Management by recognizing a Watershed Management Unit at the provincial level under the Chief Secretary of the respective province.
- 4.4 Promote private sector participation in efficient watershed management through appropriate incentives, while levying penalties for non-compliance of relevant regulations.

5. POLICIES ON EVALUATION OF SERVICES AND INVESTMENTS

- 5.1 Evaluate the services provided by watersheds, environmental costs and benefits, and include in the national accounting system.
- 5.2 Allocate an appropriate portion of the GDP through the national budget, and cause mandatory allocation of percentage of the income of all beneficiaries including directly benefited statutory bodies, a reasonable portion from the Provincial Council budgets and Local Authority budgets, for the sustenance and management of watersheds.
- 5.3 Provide incentives through appropriate mechanisms to those who contribute to the rehabilitation, protection and management of watersheds.
- 5.4 All beneficiaries of watershed management should contribute a share of their income for the upkeep of the watersheds they are serviced by.
- 5.5 Introduce alternative non-land based sources of living for poverty alleviation as a measure for relieving the pressure on critical watersheds.

6. POLICIES ON COORDINATION AND INTEGRATED MANAGEMENT

- 6.1 Appropriate mechanisms be evolved for the coordination of watershed management activities among stakeholder at all levels, laterally and vertically.

- 6.2** Facilitate the preparation and implementation of joint programmes for total watersheds that cross administrative, electoral and provincial boundaries, through agreements where necessary.
- 6.3** Encourage the inclusion of watershed management in secondary and tertiary levels of education.
- 6.4** Recognize the need to rationalise and remove policy gaps minimise overlapping responsibilities among different institutions in watershed management.

7. POLICIES ON RESEARCH AND TRAINING

- 7.1** Encourage research on watershed protection, conservation, management, traditional values, evaluation of services, investments required and intersectoral linkages.
- 7.2** Study the adequacy and suitability of the present sector policies for total Watershed management; and recognize the need for the resolution of conflicts between sector policies, if any.
- 7.3** Training of those who are involved in watershed management on a continuous basis be emphasised.

EXPLANATION OF KEY CONCEPTS

Biodiversity : The total variety and variability of all living things including their genetic constituents, interrelationships and habitats, and the ecosystems and landscapes of which, they are part.

Conservation : The wise use and management of nature and natural resources for their inherent values for the benefit of society, bearing in mind that future generation have as much right to these resources as the present generation.

Environment : The ecosystem of which, we are part.

Ecosystem : A complex of living communities of organisms and their non- living environment interacting as an entity of its own.

Indicators : Direct or indirect signs that inform us about the achievement of objectives.

Land: Land covers climate, water resources, soils and vegetation, including both grassland resources and forests.

Land alienation: The transferring of state land to private ownership.

Land degradation: Temporary or permanent lowering of the productive capacity of land.

Land use: Spatial patterns of activity in a given area arising out of man's past and present actions. It includes residential, commercial, industrial, agricultural and recreational uses, area under forest and fallow, and areas used for infrastructure development or for other purposes.

Land use planning : The systematic assessment of land and water potential, alternatives for land use, and economic and social conditions , in order to select and adopt the best land use options. Its purpose is to select and put into practice those land uses that will best meet the needs of the people, while safeguarding resources for the future. The driving force in planning is the need for change, the need for improved management or the need for a quite for different patterns of land use dictated by changing circumstances.

Protect : The preservation from harm and without intervention and active management.

Sustainable Development : Development that meets the needs and aspirations of the present generation without compromising the ability to meet those of future generations, which have as much right to nature and natural resources as we do.

Sustained use : Continuing use of the land without severe and/ or permanent deterioration in quality and productivity.

Watershed : Geo-hydrologic area which catches, stores and discharges water though common drainage point and bounded by a ride line.

Critical watersheds : Critical watersheds of this country are located in the land area above 300 m msl, which cuts across the boundaries of provinces, districts and all administrative limits requiring immediate attention because any intervention will have adverse impacts immediately or in the immediate future.

Protected watersheds : categories other than strictly protected areas identified in watershed areas (see Strictly Protected Watersheds), where intervention is restricted or regulated.

Strictly Protected Watersheds : Strict Nature Reserves, Nature Reserves, National Parks, National Heritage Wilderness Areas, conservation forests, biosphere reserves, degraded forests that need to be restored for ecological reasons, river and stream reservations, high risk landslide areas, private forests, if any, that need conservation, identified above 300m msl and in water catchments below 300m msl, where intervention is not allowed.

Watershed Management : The administration and regulation of the aggregate resources of a water course for the production of water and the control of erosion of stream flow and floods.

POLICIES ON WATERSHED MANAGEMENT

Policies
Strategies
Indicators

2. 1 PROTECTION

- 2.1 Watersheds or segments of watersheds be classified as strictly protected watersheds and protected watersheds.**
- 2.2 All encroached and disturbed lands in critical watersheds in the central highlands be surveyed and demarcated and recovered where appropriate.**

Strategies for 2.1 & 2.2

- a. Carryout geological, hydrologic, geomorphologic, soil, land use and other studies as necessary utilising a technical committee of competent persons, to determine the classes of watersheds.*
- b. Categories watershed based on the above studies watershed will be categorizes as follows.*
- 1. Strictly protected watersheds / segments of watersheds Strict Natural Reserves, Nature Reserves, National Parks, National Heritage Wilderness Areas, conservation forests inclusive of buffer zones, biosphere reserves, degraded forest areas that need to be restored for ecological reasons, river and stream reservations and private forests, if any, in watershed areas will be included in this category, These watershed will be allowed for natural recovery. People living in these watershed will be resettled in suitable areas according to the National Involuntary Resettlement Policy.*

2. Protected watersheds / segments of watersheds.

- i. Only restricted land use in strict terms of the Soil Conservation Act and its regulations, will be allowed in these areas;
- ii. Non-extractive uses such as nature based tourism, controlled collecting of dead wood, medicinal herbs etc will be allowed in areas where agriculture is not practiced;
- iii. Preparation of management plans for forests in protected watersheds will be mandatory.
- c. Conduct a surveying and demarcating programme for all watercourses in state and other lands irrespective of the ownership of the land conducted using GIS and other advanced technology, through a special survey unit within a given period, for the purpose of strict protection and, protection with regulated and controlled multiple use and conservation.
- d. Prepare and compile Grama Niladhari division level land use maps in the scale of 1:10,000 with other relevant information in Divisional Secretaries' offices as a database in digital and analogue forms for monitoring and reference purposes.
- e. Ensure that human intervention except approved research activities are not allowed in the strictly protected watersheds. Limited and regulated multiple uses without structural changes and with appropriate and approved conservation measures, to be allowed in protected watersheds or segments of watersheds.
- f. Ensure that state agencies do not regularize encroachments in environmentally sensitive areas in watersheds, while regularization of encroachments outside the sensitive areas are transparent, based on equity, with community participation, harnessing the consensus of the people, and not on individual basis.

Indicators of 2.1 - 2.2

1. Watershed areas in the country are classified.
2. Watercourses in state and other lands surveyed and demarcated.
3. The number of sites declared as of national and aesthetic value.
4. GN level digital and analogue maps available in Divisional Secretary offices.
5. All land determined as conservation areas declared and gazetted under the Soil Conservation Act.

2.3 Individuals and Institutions be held responsible for the protection of hydrologic reservations and for the implementation of existing provisions in all current enactments and regulations in force and any new provisions that may be made from time to time. Failure to implement regulations be considered an offence against the State.

2.4 All undeveloped, steep and sensitive lands situated above 1500m msl, shall not be released except for conservation purposes or strictly for natural restoration.

Strategies for 2.3 & 2.4

- a. Hold individuals and institutions responsible to protect river and stream reservations in all private lands and State lands in terms of the existing legal provisions to the officials who hold authority on the enforcement of such provisions to be held responsible for omission of their duty.
- b. Ensure the security of land tenure especially in-alienated State lands for the purpose of inculcating interest in improving and protecting the lands in watersheds.

- c. Hold the estate management of the plantations owned or managed by the State or private sector and private companies responsible for protecting streams, water courses, water sources, marshy lands and their reservations inside estates according to the guidelines issued by the Ministry in charge of the subject of watershed management.
- d. Issue guidelines to the estate management on the protection and management of watersheds to the estate management.
- e. Ensure plantation sector to protect will be pursued to protect designated watersheds through mandatory agreements with the Ministry in charge of watershed management.
- f. Ensure all State and private institutions and private land owners who hold stewardship of undeveloped, high slope and sensitive land situated above 1500m msl, dispose lands only for conservation purposes or allow natural recovery.
- g. Ensure the settlement programmes carried out by the Title Settlement Department are considered as most relevant in watershed areas and determine the tenure of all lands and place determined and the responsibility of protection upon the owners of land.
- h. Ensure that the titles of alienated state lands are settled so that the owner takes interest in the improvement of productivity through conservation measures.

Indicators of 2.3 - 2.4

1. Individuals, institutions and officials responsible to protect each river and stream reservations in private lands are identified.
2. Identified custodians and protectors are aware of the guidelines to protect watersheds and they are practiced.
3. No lands above 1500m msl are disposed for purposes other than conservation.

- 4. All unsettled areas in the watershed area are settled by the Land Settlement Department.
- 5. The number of titles settled in connection with State lands alienated under various alienation programmes.

2.5 High risk landslide prone areas be declared as strictly protected areas and medium and low risk areas as protected areas.

Strategies 2.5

- a. Declare landslide prone areas identified as high risk areas in watershed as strictly protected areas. Areas identified in watersheds as of medium risk and low risk are considered as protected areas and people are educated to live in those areas adhering to the procedures of early warning systems and ensure that people are aware of the dangers and that they do not aggravate landslide conditions.
- b. Ensure new constructions in watersheds, and prohibited in the areas where landslides, rock falls and subsidence have occurred in the recent past and perennial threat to life and property exists, and land use and management practices associated with education and awareness programmes are improved to halt and reverse the process of slope degradation with mitigatory measures. Undertake landslide remediation and establish early warning systems with rapid response systems in such problematic areas.
- c. Ensure that new constructions in watersheds are not permitted in areas identified by NBRO as prone to land subsidence, rock fall and landslides. Ensure that essential additions to the existing structures with appropriate land use are allowed only after thorough site investigation, adequate precautions and risk assessment. Ensure that early warning systems if symptoms of landslides are clear and risk levels are high.

- d. Discourage new constructions in areas where moderate level of danger of landslides exists in watersheds and introduce discouraged and improved landuse planning practices to halt and reverse the process of slope degradation. Ensure all essential constructions, remediation and new projects are subject to Landslide Hazard Assessment.
- e. Ensure that engineered and regulated new constructions and well planned cultivation are permitted in areas identified by NBRO as of slight danger in watersheds and plans for constructions technically vetted and certified.
- f. Introduce Geo-physical stabilization techniques and early warning systems in vulnerable areas in watersheds.

Indicators of 2.5

- 1. The extent and number of high risk, medium risk and low risk lands identified in areas prone to landslides in watersheds.
- 2. People living in these areas are aware of the dangers and the number responding to early warning systems.
- 3. The number of rejected new constructions in high risk areas.
- 4. Early warning systems establish in high risk areas.
- 5. The number of constructions and modifications and new projects in medium risk areas are subjected to landslide hazard assessment.

2.6 Effective environmental practices of traditional, cultural, religious and aesthetic values be recognised.

Strategies for 2.6

- a. Recognise traditional concepts, cultural, religious and aesthetic values of rivers, rocks,, forests along with traditional agricultural and environmental practices and biological measures of controls, which protected the watersheds throughout the history as recognized as self-protective measures built into the watershed system.

- b. Study these concepts by addressing the traditional knowledge of the people. Such characteristics are made use of and upheld for future generations.

Indicators of 2.6

- 1. A document of traditional concepts, values, and practices prepared for each micro watershed.
- 2. The extent of application of traditional measures for protection and the degree of protection achieved.

3. MANAGEMENT

- 3.1 All agricultural practices with conservation measures including the selection of crops, cropping patterns and land and water management in critical watersheds be according to the guidelines issued under the Agrarian Services Act, Soil conservation Act and any other Act that may seem relevant and the policies of the Draft National Land Use Policy.

Strategies for 3.1

- a. Ensure that cropping patterns, crop selection and land management in a watershed areas are according to the guidelines issued under the Agrarian Development Act and regulations made under the Soil Conservation Act and regulatory provisions under other relevant enactments.
- b. Ensure cultivation of crops, which accelerate erosion in watersheds, are restricted in sensitive areas and the use of agrochemical is minimized.
- c. In order to prevent further degradation, ensure that the Ministry in charge of the subject of agriculture and the Department of Agriculture and the Provincial Department of Agriculture focus on agricultural subsidies in watershed areas as soil conservation subsidies rather than curative subsidies such as fertilizer subsidy.

- d. Ensure that the Department of Agriculture conducts cost benefit analysis of cultivating crops that accelerate degradation of soil and water in watershed areas and importing same, and opt for importing such commodities, as far as possible, rather than cultivating them in areas where watershed are adversely affected.
- e. Promote low cost biological, mechanical and indigenous soil conservation measures and agronomic measures.
- f. Adopt integrated farming systems along with appropriate livestock components.
- g. Promote agro-based and other industries in watershed areas for efficient use of agricultural production and for generation of additional income.
- h. Make available the appropriate technology to the poor through skills development programmes in order to encourage enterprises.
- i. Ensure that soil and water conservation programmes are conducted as poverty alleviation programmes to reach the people, and make the results tangible.
- j. Specify appropriate uses on the basis of land capabilities and present land use.
- k. Ensure that the state agencies which bear the stewardship of state land in protected watershed areas recover possession of land encroached upon, convert them to recommended land uses and prevent further encroachments.
- l. Ensure that relevant State agencies encroachers in protected watershed areas, who do not satisfy criteria for settlement and utilization of lands and regularize where criteria are fulfilled.

- m. Ensure that the stock of remaining unutilised State lands are taken into conjunction with the Protected Area Network, specifically categorised them according to the most suitable land uses, and recognize the land use plans are recognized as a proof in encroachment cases.
- n. With this process, ensure that people made to known that all lands are allocated for a particular land use and there is no longer any vacant land to encroach upon.
- o. Ensure that the Ministry in charge of the subject of lands prepare an alienation plan for all remaining land that could be released.
- p. Conduct programmes to replace environmentally damaging exotic varieties and to plant appropriate indigenous planting material in forest plantations in watershed areas where ever possible.
- q. Rehabilitate degraded watersheds will be rehabilitated or allow them to be recovered through natural regeneration.
- r. Watersheds disadvantaged by location, ir vulnerable and fragile environments are turned to a situation of locational advantage.
- s. Ensure that rehabilitation and improvement programmes go beyond the vistas of rehabilitation and improvement per se, and enriched the programme with social, cultural and other activities where the rural folk are naturally motivated to, and volunteer to, get involved with.
- t. Carryout state sponsored and private sector development activities in watershed areas without damage to watershed characteristics.

- u. Introduce appropriate economic activities to improve living standards of the resource poor people who are living in watersheds, while maintaining the characteristics and conditions of watershed.*

Indicators of 3.1

1. The number of interventions by State agencies in rehabilitation activities.
2. The number of sensitive areas mapped.
3. No land use change is carried out without the authority of the Watershed Management Units of the provinces.
4. No land alienation carried out without the concurrence of the LUPPD.
5. Guidelines issued by the Agrarian Development Department and the Department of Agriculture on cropping patterns, crop selection and land management.
6. No crops that encourage erosion are cultivated.
7. The number of studies carried out on existing agricultural subsidies and alternatives proposed.
8. The number of encroachments recovered by respective state agencies.
9. Reduction of the transport of sediment loads to tolerable levels.
10. Reduction of the rate of siltation of reservoirs.
11. Reduction of rate of on-farm and off-farm erosion in agricultural lands.
12. Improvement of water quality in rivers, tributaries and streams.
13. Reduction of dependency on chemical fertilizers and agrochemicals.
14. Reduction of contamination of air and water pollution, and food pollution.
15. Reduction of production costs of agriculture.
16. The number of forest plantations planted with indigenous varieties.
17. The number of forest plantations in watersheds, of exotic varieties which cause environmental problems, replaced with indigenous varieties.
18. The number of silt traps created within catchments.
19. The number of engineering measures for soil and water conservation.

20. The number of programmes formulated for production and productivity improvement by government and other organizations.
21. Increased productivity of agricultural lands.
22. Increased income of people through on-farm activities, integrated farming (crop cultivation, livestock etc.,) and alternative opportunities such as industries, trading and agrobased industries.
23. Increased ground water levels.
24. Reduction of impacts of erosion than mere reducing erosion.
25. The number of researches carried out.
26. The extent of cultivation of indigenous planting material.

3.2 Incorporate appropriate mitigatory measures in the implementation of development activities in watersheds.

Strategies for 3.2

- a. Ensure that the construction of houses are on storey-basis to save apace, drains with full lining, agriculture with trained gullies, and all construction work according to respective guidelines.*
- b. Ensure that any land use change in watershed areas are allowed only with the approval of the provincial Watershed Management Unit of the respective province.*
- c. Carryout alienation of State lands in watershed areas only in accordance with the detailed land use plans and with the concurrence of the Watershed Management Units of respective provinces.*
- d. Design a non-erosive drainage network will be designed for respective watersheds.*
- e. Adopt Measures with stakeholder participation to prevent sedimentation in watersheds.*
- f. Ensure that the local Authorities and other authorities strictly follow the available guidelines on road and other*

constructions and will not approve any constructions in slopes above 100% (45 degrees) in watershed areas unless submitted with appropriate conservation and remedial measures and methods of disposal of excess earth and other material from the particular site, along with monitoring mechanisms during the period of construction and thereafter.

- g. Ensure that the local Authorities and other authorities maintain roads and drain systems in watershed areas in time, and arrest rapid degradation.*
- h. Ensure that the local Authorities and other authorities do not provide facilities, such as electricity, water and other infrastructure services for illegal structures in watershed areas.*
- i. Local Authorities will not dump waste and prohibit others dumping of waste, in streams, stream banks, rivers, river banks and in any water body in watersheds and manage waste as per the guidelines issued by the Central Environmental Authority.*
- j. Ensure that the local Authorities manage solid waste according to the guidelines issued by the Central Environment Authority on solid waste management.*
- k. Ensure that the industrial and other organizations treat wastewater before released to the environment in accordance with the national standards stipulated by the Central Environment Authority.*
- l. Ensure that the pursue factories, hospitals, hotels, boutiques, service stations and other institutions to treat wastewater through appropriate techniques before releasing to the environment in terms of the national stan-*

dards stipulated by the Central Environment Authority and monitored by the respective institutions.

- m. Ensure that land tenure in all unsettled lands above 300 m contours settled and ensure that no form of ownership or tenure bestow any institution or individual, the right to utilize land in these areas in a manner that is harmful to watershed characteristics.*

Indicators of 3.2

1. Reduced incidence of anthropogenic interventions, including forest fires.
2. The number of other programmes to maintain waterbodies within watersheds.
3. The number of constructions undertaken in slopes above 100%.
4. Reduced incidence of roadside erosion.
5. Protected roads, minor roads, and paths with drainage systems and avenue planting
6. The number of illegal structures in watershed areas, provided with public utilities.
7. The number of suitable dumping grounds for waste and land fills with sign boards.
8. The number of solid waste management programmes carried out by local bodies.
9. No waste water is discharged from factories, hospitals, hotels, boutiques service stations and other establishments.
10. No encroachments regularized in environmentally sensitive areas.
11. All regularisation of encroachments outside sensitive areas are transparent.
12. No complaints from the public regarding regularisation of encroachments.
13. All remaining state land is listed, and land use categories determined.
14. People are aware that there is no vacant state land to encroach upon any longer.

3.3 Compliance with existing laws and regulations be ensured at all times to prevent further degradation of critical watersheds.

- a. Strengthen state agencies, which enforce laws related to watershed protection and resource required for protection activities provided on a priority basis.
- b. Review legal provisions related to watershed management in various laws and regulations from time to time in order to eliminate conflicts.
- c. Study inconsistent legal provisions in various statutes with regard to integrated management of watersheds and necessary amendments are be made in the respective legislation.
- d. Request courts of justice to try cases against illicit activities related to encroachments into reservations in watersheds, summarily, on *prima facie* evidence of certificate of the District Secretary / Divisional Secretary / Provincial Land Commissioner.
- e. Amend existing laws will be amended to suit implementation of this policy.
- i. Even if the title is changed, the use conditions of lands in watershed areas need to remain and therefore the Land Commissioner amend LC 144 permit, as long as it remains valid, to inquire the Government Agent / District Secretary / Provincial land Commissioner to inspect and determine essential measures for sustainable management of the plot of land, before alienating allotments.
- ii. Land Commissioner to amend LC 144 permit, as long

as it remains valid, to prepare a legally binding schedule, listing specific measures to be adopted under different physiographic situations as an integrated part of the form.

- iii. Land Commissioner to amend LC 144 permit, as long as it remains valid, to legally bind the leaseholder of State land to inform threats to micro catchments from natural causes and human activities and to assist in action to overcome such threats.
- iv. Commissioner of Agrarian Services to amend Section 83 of the Agrarian Development Act to legally bind the owners and operators of private lands to inform threats to micro catchments from natural causes and human activities and to assist in action to overcome such threats.
- v. Forest Department to restrict interfering with streams and other water sources in village forests and disturbing the soil, by amending Section 6 and 7 of the Forest Ordinance, as in the Soil Conservation Act.
- vi. Although breaking up of soil is mentioned in a general sense as prohibited in Section 20 (1) of Forest Ordinance, it is not specifically mentioned in paragraphs 20 (1) (a) to (h) which specify activities to be regulated or prohibited. Forest Department to amend the Section 20 (1) (a) to (h) accordingly.
- vii. Sections 4 and 6 of Soil Conservation Act, which empower the Minister to make regulations for conservation areas to be applicable notwithstanding provisions in Section 20 (3) of the Forest Ordinance where the Minister is empowered to make rules to exempt or cancel

exemption of rules for the purpose of regulating activities in forests.

viii. *Section 8 (1) of the Forest Ordinance exempts all acts from being offences, if carried out with the written permission of forest officers. However such acts to be subject to the section 4 and 6 of Soil conservation Act.*

ix. *Although under the natural vegetation there is little soil erosion and water loss, accelerated soil erosion and water loss take place in forest plantations and degraded forests. Therefore the provisions in the Soil Conservation Act to be applied to forest plantations and degraded forests as well.*

x. *Suitable irrigation technologies to be developed and included in Soil Conservation Regulation as guidelines on water management.*

xi. *Critical watershed to be brought under the Environmental Protection Areas (EPA) in the National Environmental Act in order to allow active collaboration of other agencies with comprehensive interlocking rules because the EPA may not have technical expertise to handle such undertaking.*

xii. *Section 24 C & D of the National Environmental Act enables the Minister to declare any area to be an EPA. In such a protection area Minister may declare that any planning scheme or project under the provisions of any law, which is in conflict with any provisions of this Act shall cease to operate. When such an order is in force only the Central Environmental Authority shall be responsible for physical planning of such area in accor-*

dance with the provisions of this Act. This is too restrictive. Therefore the Central Environmental authority to amend Sec 24(1) 4 to enable the recognized agencies to undertake planning and development.

xiii. *Section 10 (1) of National Environmental Act provides the Central Environmental Authority with powers and functions to undertake investigations and inspections to ensure compliance with National Environment Act, and to investigate complaints relating to non-compliance with any of its provisions. Central Environmental Authority to declare critical watersheds as protection areas in order to enhance and protect the effectiveness of good management in EPAs.*

Indicators of 3.3

1. The number of cases summarily tried in courts regarding encroachments.
2. LC 144 is amended as required.
3. Forest Ordinance is amended as required.
4. National Environment Act is amended as required.
5. Agrarian Development Act is amended as required.
6. Regulations and orders under the Soil Conservation Act are gazetted for respective areas.
7. The number of policy gaps identified and recommendations made to amend as and when required.

4. MANAGEMENT

4.1 Promote and strengthen communities / stakeholders to manage their respective watersheds ensuring equity.

Strategies for 4.1

- a. Ensure that people manage respective micro watersheds with the assistance of relevant public officials, and the responsibility of the public institutions and public officials will be to perform their duties and enable them to manage micro watersheds without difficulty.
- b. Setup rural level Watershed Management Societies for each watershed with the dwellers near the stream reservations and users in the immediate downstream, along with representatives of related community based organisations, as members. Heads of the relevant Local Authorities, Grama Niladhari, and other relevant village level government officials who are responsible for the management not of natural resources, to ex-officio members, in these Societies. Ex-officio members not to exercise the voting power at Society meetings.
- c. Select knowledgeable and concerned members, to a working committee from the community consensus as far as possible, for a period of one year. This working committee to consist of 11 office bearers i.e.a chairman, vice-chairman, secretary, asst secretary, a treasurer and any other office bearers, A set of guidelines to be adopted by the Society for its functioning.
- d. Register these societies under the Ministry in charge of the subject of watershed management and legally recognize under the Voluntary Organisations (Registration and Supervision) Act No 31 of 1980 as amended by Act No 8 of 1998.

- e. These Societies to meet every month and review all activities related to the particular watersheds and find solutions for problems, from within or from outside and take up unresolved issues with relevant agencies or at the Divisional Watershed Management Committee.
- f. In view of various destructive human interventions such as forest fires, encroachments, illicit forest activities and ill-conceived activities in the name of development, ensure the society prepare and implement catchment management plans based on the land use policy as well, for the conservation, protection, use and sustainable management of respective critical watersheds, with people's active participation and local partnerships.
- g. Ensure the societies identify the vision of the community about the resource base and the rural level planning process in the logical framework with objectives, outputs, necessary inputs, and indicators of achievement.
- h. Create awareness build, capacity of the communities, and educate stakeholders who are living in and associating with watersheds, to realise the demonstrated benefits of watershed management.
- i. Conduct programmes to empower people to undertake watershed management activities by themselves and the government and NGOs to work as facilitators.
- j. Ensure that watershed management is "people friendly, process based and fitting to farmers' pace of life" rather than 'physical target oriented'.

Indicators of 4.1

1. The number of Rural level Watershed Management Societies registered under the Ministry in charge and recognised under the Voluntary Organisations (Registration and Supervision) Act.
2. The number of education and awareness programmes conducted at rural level.

3. The number of programmes conducted by the extension arms of relevant departments/ statutory bodies.
4. The number of programmes conducted for capacity building and skills development of stakeholders.
5. Capacity of stakeholders built and skills developed.
6. All Rural level Watershed Management Societies possess guidelines for their functioning.
7. All Rural level Watershed Management Societies possess a catchment plan for respective.

4.2 Create awareness and consciousness among communities/ stakeholders and promote commitment for sustainable watershed management through participation and partnership.

Strategies for 4.2

- a. *Conduct programmes educate the land ownership in the watershed area, that the land tenure does not bestow the right of utilizing land for purposes that are harmful to watersheds.*
- b. *Harness people's participation, specially the participation of school children, utilizing media and other mechanisms, in protecting watersheds.*
- c. *Conduct awareness and educational programmes through print and electronic media and other mechanisms for the people to feel a sense of ownership in the management of watersheds.*
- d. *Adopt a participatory approach in watershed management; where people are the ultimate beneficiaries and this approach is largely accepted since it is based on benefit sharing.*
- e. *Ensure that the officers assist people in problems related to watersheds such as the accessibility to capital*

requirements, obtaining loans from state and private banks, with lesser formalities, and in return, people are encouraged to take the responsibility of protecting and managing watersheds.

- f. *Launch continuous and well-conceived programmes for school children through electronic and printed media.*
- g. *Design programmes to keep the general public aware that if precautionary action is not taken today, the future is at stake and the burden of negligence today to be compensated by future generations.*
- h. *Develop and implement pilot projects/ programmes for integrated holistic development with community participation, at the rural level, through rural level Watershed Management Societies by Watershed Management Units and Divisional Secretaries.*

Indicators of 4.2

1. Instances of involving in social, cultural and other activities in villages.
2. The number of awareness and education programmes launched about the limits of land utilization they should undertake for their own benefit.
3. Restrictions made known to all owners and operators of land in watersheds regarding private lands bordering rivers and streams and on agricultural practices and other land use.
4. The number of programmes assisted by Provincial Councils, Local Authorities and other public institutions to harness people's participation.
5. The number of programmes that empowered people to undertake watershed management activities.
6. The number of programmes for education and awareness, the number of personnel benefited, feedback received from the personnel and the impact on watershed management.

4.3 Facilitate a holistic approach to Watershed Management by recognizing a Watershed Management Unit at the Provincial level under the Chief Secretary of the respective province.

Strategies for 4.3

- a. Establish Watershed Management Units under the Chief Secretaries of respective provinces with the approval of the Board of Ministers to manage all natural resources linked to watersheds.
- b. Ensure the implementation of policies and legislation by respective line agencies.
- c. Ensure that the Watershed Management Units launch programmes to enhance the capacity of relevant agencies in integrated and participatory activities.
- d. Ensure that Watershed Management Units plan and work towards an environmentally and economically healthy watershed that benefits all stakeholders.
- e. Where there are no agencies indicated in this document as responsible for the implementation of statements in this document, ensure that the Provincial Watershed Management Units will look after them until appropriate agencies are statutorily established.

Indicators 4.3

1. Watershed Management Units established at the provincial level.
2. The number of programmes conducted to enhance capacity and improve attitudes of line agencies.
3. The number of projects and programmes launched with the integration of line agencies.

4.4 Promote private sector participation in efficient watershed management through appropriate incentives, while levying penalties for non-compliance of relevant regulations.

Strategies for 4.4

- a. Involve private sector at all levels in view of the large extents of lands under the private sector management.

Indicators of 4.4

1. The number of programmes launched to involve private sector.
2. The number of incentive schemes offered to the private sector.
3. The number of private sector institutions or individuals involved in watershed management programmes.

5. EVALUATION OF SERVICES AND INVESTMENTS

5.1 Evaluate the services provided by watersheds, environmental costs and benefits, and include in the national accounting system.

5.2 Allocate an appropriate portion of the GDP through the national budget, and cause mandatory allocation of a percentage of the income of all beneficiaries including directly statutory bodies, a reasonable portion from the Provincial Council budgets and Local Authority budgets, for the sustenance and management of watersheds.

5.3 Provide incentives through appropriate mechanisms to those who contribute to the rehabilitation, protection and management of watersheds.

5.4 All beneficiaries of watershed management should contribute a share of their income for the upkeep of the watersheds they are serviced by.

5.5 Introduce alternative non-land based sources of living , for poverty alleviation as a measure for relieving the pressure on critical watersheds.

Strategies for 5.1-5.5

- a. Evaluate the services provided by watersheds, and environmental costs and benefits of watersheds through Cost Benefit Analysis, Economic Evaluation of Environmental Impacts and Environmental Impact Assessment, used in decision making, and include in the national accounting system, with a view to granting the place due for watersheds in the national economy.
- b. Workout cost benefit analysis of conservation, agricultural practices, reforestation, maintenance of reservoirs, sediment transport and desilting of reservoirs, people's participation, etc, utilising expert team.
- c. Quantify Environmental cost and benefits of watersheds economically by the expert team mentioned above and recommend to the National Finance Commission in order to include in the national accounting system for the management of watersheds.
- d. Work out an incentive scheme for those who contribute in rehabilitation, protection and management of watersheds utilising an expert team.
- e. Develop modelling capabilities to reliably assess sediment yields from micro catchments and individual plots.
- f. Measure environmental services and water quality of watersheds and such services and measurements to be used as the basis for incentives.
- g. Measure sediment yield from lands in watersheds micro catchment basis or plot basis according to the tech-

niques of measurements and methods of computation and rebates or incentives to be granted by respective agencies (e.g. CEB, NWS&DB, DOA) to good users i.e. watershed dwellers, cultivators, estates etc.

- h. Ensure agencies such as CEB, NWS&DB, Irrigation Department etc, to have their own watershed ,management plans in order to reasonably contribute towards conservation, protection and management of watersheds.
- i. Improve Hydrology protection, water retention structures/ponds with an integrated participatory approach in the watershed of the respective project.

Indicators of 5.1 - 5.5

1. The number of evaluation reports produced annually.
2. Watershed management included is the national budget.
3. The percentage of GDP for watershed management.
4. The percentage allocated for the national, provincial, local authority budget.
5. The number of incentive systems offered for those who contribute to the protection and management of watersheds.
6. The amount of incremental monetary benefits gained by offering incentives.
7. The number of cases for which environmental cost and benefits of watersheds have been carried out.
8. Upgraded living standards of people in watersheds.
9. Upgraded characteristics and conditions of watersheds.
10. The number of pilot rural level projects carried out.
11. Reduction of expenditure on remedial and curative activities on damages caused to watersheds.
12. Amount of modelling capacities developed for measuring sediment yield from catchments/ plots.
13. Hydrology of the related watershed of the particular project/plan is improved and the generation potential cf water/electricity is assured.

14. Quantity of sediment yields reduced.
15. The number of people trained in sediment monitoring.
16. Reduction of investments on maintenance of power/irrigation infrastructure.
17. The amount of electricity generated.
18. Projects/programmes prepared and launched for watershed management.

6. CO-ORDINATION AND INTERGRATED MANAGEMENT

- 6.1 Appropriate mechanisms be evolved for the coordination of watershed management activities among stakeholders at all levels, laterally and vertically.**
- 6.2 Facilitate the preparation and implementation of joint programmes for total watersheds that cross administrative, electoral and provincial boundaries, through agreements where necessary.**
- 6.3 Encourage the inclusion of watershed management in secondary and tertiary levels of education.**
- 6.4 Recognize the need to rationalise and remove policy gaps and minimise overlapping responsibilities among different institutions in watershed management.**

Strategies for 6.1 - 6.4

- a. *Ensure that the Watershed Management Societies/ Committees at all levels regularly review the activities, which have any bearing on watersheds and inform to relevant local Authorities and other authorities, as the case may be, and those authorities to take remedial measures.*
- b. *Ensure that the Watershed Management Societies/Committees at all levels review supervisory role and monitoring mechanism of local authorities and other authori-*

ties related to watershed management, and lapses inform to the relevant authorities.

- c. *Ensure that the Watershed Management Societies/Committees at all levels review Maintenance of infrastructure by local authorities in watershed areas and lapses informed to the relevant authorities.*
- d. *Coordinate activities of all agencies in Watersheds to coordinate at rural level through Rural Watershed Management Societies, at divisional, district and provincial levels through Watershed Management Committees, and at the national level through a National Watershed Management Steering Committee.*
- e. *Provide for a Watershed Management units established under the Chief Secretaries of respective provinces, to function as institution responsible for vertical and horizontal coordination of watershed activies.*
- f. *Eliminate policy gaps in the management of natural resources in relation tc watershed management in order to bring all related sectors more close to each other.*
- g. *Provide for the Divisional level Watershed Management Committees to be headed by Divisional Secretaries and established at the DS offices with*
 - i. *Chairmen of Rural level Watershed Management Societies in the Division.*
 - ii. *Divisional level officials responsible for natural resource management,*
 - iii. *Heads of Local Authorities in the Division.*
 - iv. *Two representatives of NGOs,*
 - and*

- v. One representative from the plantation sector, and meet every month to monitor activities of the Rural level Watershed Management Societies established for the participatory management of watersheds, to coordinate development activities, which have any impact on watersheds in the division, and to attend to matters unresolved at the rural level.
- h. Provide for a Divisional level Watershed Management Committees to ensure that all development plans in all watershed areas are developed and implemented in close cooperation with the local communities.
- i. Provide for a District level Watershed Management Committee to be headed by the District Secretary and consisting of relevant Divisional Secretaries, relevant District Heads of Departments and one elected Rural Watershed Management Society Chairman representing each division to meet every two months to co-ordinate activities which have any impact on watershed management in the district, and attend to matters unresolved at the divisional level.
- j. Ensure that the Watershed Management Units effectively co-ordinate different line agencies and service agencies that are responsible for development activities in watershed.
- K. Provide for a Provincial level Watershed Management Committees to be headed by Chief Secretaries of provinces comprising of relevant District Secretaries, relevant provincial/district level heads of departments and statutory bodies, one elected Rural Watershed Management Society Chairman representing each District, one representative from the plantation sector, one NGO representative and any others coopted by the Committee, convened by the Watershed Management Unit, will meet quarterly and review watershed management activities in the province through integrated approaches in order to identify priorities and give directions to the line agencies and various service agencies, and attend to matters unresolved at the district level.
- l. Establish a National Watershed Management Steering Committee under the Secretary to the Ministry in charge of the subject, consisting of Secretaries, or their representatives, to the Ministries in charge of various aspects related to natural resources, finance, plantation, irrigation, agriculture, national planning and national physical planning. Chief Secretaries of relevant Provinces, one elected Rural Watershed Management Society Chairman representing each relevant Province, expertise (land, water, forest, wildlife, survey, irrigation, environment etc), and any others, co-opted by the Committee, to meet quarterly, determine the policy and legal matters, and monitor watershed management activities at all levels, while working in close co-operation with the National Water Resources Authority, and attend to matters unresolved at the provincial level.
- m. Where necessary, provide for the National Watershed Management Steering Committee to intervene in the coordination of activities of central government agencies, which are not directly under the administrative control of the Provincial Council.
- n. Provide for appropriate coordination mechanisms to be worked out by above mentioned committees at national, district, and divisional levels, by Watershed Management Units at provincial level, and by Rural Watershed Management Societies at the rural level.

- o. When watersheds cross administrative and other boundaries, provide for relevant Rural Watershed Management Societies and Divisional level, district level, Provincial level Watershed Management Committees to identify such watersheds as joint areas and prepare and implement activities with the neighbouring unit, jointly.*
- p. Provide for the Ministry in charge of watershed management to work with the Ministry in charge of education to include watershed management in the education curricula at primary, secondary, tertiary and university education as relevant.*

Indicators of 6.1 - 6.4

1. The number of Divisional level Watershed Management Committees established in relevant Divisional Secretary offices.
2. The number of Divisional level Watershed Management Committees established.
3. Provincial level Watershed Management Committees are established in relevant provinces.
4. National level Watershed Management Steering Committee under the chairmanship of the Secretary in charge of the subject of watershed management is established.
5. Coordinating and monitoring plans prepared at divisional level.
6. Coordinating and monitoring plan prepared for provincial level.
7. Degree of harmony existing among relevant agencies at all levels towards conservation, protection, management and upgrading of watersheds.
8. The number of joint activities implemented for joint areas.
9. No plans/ projects/ programmes implemented in or near watersheds without a watershed management plan.
10. The number of policy gaps identified and action taken.
11. The number of watershed management programmes introduced to the school and university education curricula.

7. RESEARCH AND TRAINING

7.1 Encourage research and training on watershed protection, conservation, management, traditional values, evaluation of services, investments required and intersectoral linkages.

7.2 Study the adequacy and suitability of the present sector policies for total Watershed Management; and recognize the need for the resolution of conflicts between sector policies, if any.

7.3 Training of those who are involved in watershed management on a continuous basis be emphasised.

Strategies for 7.1 - 7.2 & 7.3

- a. Conduct research for rehabilitation and improvement purposes through youth and university students.*
- b. Carryout research related to rehabilitation, improvements, land use and agriculture in watersheds will be carried out through youth and university students.*
- c. Carryout studies regarding the adequacy and suitability of the present sector policies for total Watershed Management; and the need for the resolution of conflicts between sector policies.*

Indicators of 7.1 - 7.3

1. The number of research studies carried out.
2. The number of those who obtained training.
3. The degree of application of research findings in the field.
4. The number of studies carried out regarding the policy gaps.