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Editor's Note

Dear Reader,

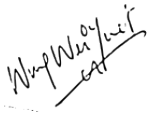
Change is part of life, we assure ourselves. However, we like to hold fast to each and every unchanging feature of our lives. It could be our habits and daily routines, or the unchanging clockwork of the solar system. In contrast, at Noragric, our subjects revolve around the study of social change, environmental change, and their consequences.

In this Volume of the *UMB Student Journal of International Environmental and Development Studies*, we present a diverse collection of articles by UMB students, fitting with Noragric's multidisciplinary scope. We hope that this collection serves as a record of the changing nature of these topics, and an inspiration for UMB students.

This project was completed with the generous support of many people. We would like to express our deepest gratitude to our faculty advisor and coordinator for The Noragric Writing Centre (NWC), Professor William Warner. Thank you for your constant dedication, motivation, support, pearls of wisdom, funny jokes, and pizza.

We would also like to thank Leslie McDonnell, from the Editorial Board Volume 1, for her advice, and getting us started on the project. Ingunn Bohmann, the Study Coordinator for the masters' programmes in Noragric, has been an important link to the faculty, staff and students in Noragric. Professor Tor Arve Benjaminsen has provided much enthusiasm, suggestions, and potential articles. Joanna Boddens-Hosang arranged the ISSN/ISBN numbers, and the formalities regarding the cover page design. Åslaug Borgan has been very helpful with sourcing for a cover photo, and designing the cover page. Lastly, without the effort, dedication, and sense of humour of this team of editors, this project would not have been possible. Many thanks!

Sincerely,



Wei Yuet Wong (8 June, 2012)

STOP EXPLOITING THE NEW PROTEIN SOURCE - KRILL

Rosalie Portman
Guest Student

Krill harvesting is increasing; at present, the annual catch (currently 200,000 tonnes) is only a fraction of the 2012 quota (8.6 million tonnes), deeming krill as "one of the ocean's largest known underexploited stocks" (Nicol et al. 2012). Krill holds the potential to provide protein to feed the world, however if harvested on a large scale, the potential for the entire marine ecosystem is threatened (AKCP 2006). The consequences of increasing the krill catch quota are unknown, but despite this uncertainty, countries are competing to patent the technological advances needed to exploit this natural resource. Furthermore, the krill population is, and will continue to be, directly affected by the melting of ice associated with global warming. Antarctic management regimes determining the krill catch quota have not taken this into account (AKCP 2006). Consequently, harvesting krill on a large scale needs to be stopped for two reasons: 1) the inability to predict the true cost of large-scale harvesting and global investment injected into this industry and 2) the uncertainty of how much influence climate change will have on krill populations.

Over-harvesting krill is probable if a number of eventualities simultaneously occur concerning global investment catch quota increase; the ability to preserve the crustacean quality in the harvesting process is one hurdle. Reducing the high fluoride and copper levels is another (Storebakken 2012). When these hurdles are overcome acceleration in market opportunity and investment will follow, consequently spurring on a krill-harvesting boom. This technological boom would attract financial investment ensuing further pressure to increase the krill catch quota. If global investments drive the krill market to an unstable limit, the ability to undo market driven investment becomes limited, regardless of the environmental risks. There are numerous examples in the fisheries industry where financial gain has won and exploiting a natural resource beyond repair has been the consequence, for example the commercial extinction of northern cod. More often than not society, seemingly lacking "…collective institutional and political will…" (Hutchings & Reynolds 2004: 307), chooses to exploit marine

fishes before an ecological balance, needed to prevent depletion, has been met Hutchings & Reynolds 2004).

If ice caps continue to melt, specifically in the Western Antarctic peninsula, the spawning ground needed for Antarctic krill will be in danger (Michael P. Meredith 2005). It is hard to measure the danger point and predict the scale of these impacts. With climate change adding to uncertainty, the ability to predict what catch quota is safe for krill is near impossible. In 2009, the American National Academy of Sciences published a paper framing the severity of climate change and the potential for these changes to be irreversible (Solomon et al. 2009). Increasing the krill catch quota on its own has the potential to result in irreversible consequences. When this is coupled with the threats of climate change, the dangers in exploiting this stock without understanding the consequences could be catastrophic (Storebakken 2012).

However, with a growing population, finding ways to efficiently harvest protein from lower down the marine food chain is essential: krill provides this research opportunity (Storebakken 2012). 90% of energy is lost each time fish is harvested further up the marine food chain, meaning that the lower down the marine food chain protein is sourced, the more sustainable and energy efficient it becomes (Bryceson 2012). However, harvesting krill will only be truly sustainable if it is implemented on a local scale, without large transportation ships polluting the sea, and transnational corporations monopolising the market (Storebakken 2012).

To conclude, more regulations and research are needed before the overall catch quota for krill is increased. The vulnerability of krill, regardless of the stock size, needs to be taken seriously, particularly in the face of climate change. The potential for irreversible damage, once market power and global investments take precedence, needs to be exposed. To learn from the exploitations that led to mass extinctions throughout world history, to see krill as more than a biomass to be exploited, is the first of many steps towards discovering ways to live in a self sustaining world. More sustainable solutions for krill harvesting which support local resilience need to be considered before it becomes an industry governed by the financial market.

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RESTRICTIONS ON REPRODUCTION IN DENG'S CHINA AND CEAUŞESCU'S ROMANIA: THE IMPACT OF POPULATION POLICIES ON WOMEN'S HEALTH AND DEVELOPMENT

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ABSTRACT In developed countries laws ensure equality between men and women; however, in developing countries such laws do not exist to the same extent. The absence of these laws can hinder women's development through access to healthcare, education, and opportunities at work. In the 1970s and 1980s the socialist states of China and Romania introduced two different population policies that aimed to reduce gender inequality. Despite maintaining their desire to bridge the inequality gap between men and women, both China and Romania used women's biological roles to achieve their own goals of national development. Women's responses to the policies were assumed to be homogenous, but in reality the strict conditions that went with them meant many women did not benefit from the initiatives offered at home and in the workplace. The approach of this paper is two-fold; it examines two case studies (one from Romania and one from China) and supporting literature to show that the pronatalist and one-child policies were a male-dominated top-down approach to women's development.

Introduction

Gender inequality is an ongoing problem in both developed and developing countries. Societies assign men and women distinct roles based on their biological characteristics; these roles however can conflict with individual aspirations and limit development. The socialist states of China and Romania enforced strict controls on women's reproduction and they provide insight into the contemporary views of the relationship between women's health and national development. Population policies aimed to bring women to the forefront of development initiatives (Kligman 1998) which focused on utilising women for economic growth (Croll et al. 1985). The one-child (China) and pronatalist

(Romania) policies recognised women's importance in achieving this goal, but also acknowledged women's unregulated reproduction as a setback. Although Romania and China highlighted social inequality and women's development, these countries ultimately used women to increase their economies. This was more successful in China than it was in Romania, but women in both countries continued to face difficult decisions about work and family life. Policies of coercion further marginalised women's roles by increasing female-specific health problems, challenging ideas of motherhood, and limiting women's choices at work and at home. Ultimately, only a disproportionate number of women faired better than before.

Gender as a development theory

In the 1970s, development theorists acknowledged the role of women in local and national development (Beaudet et al. 2009). From this, gender emerged as a key concept in mainstream development circles. Meanings of gender are disputed, but there is agreement that the term encompasses the biological role of men and women and associates gender as being a social construct relating to "notions of masculinity and femininity" (Momsen 2004: 2). However, biological roles and ideas of femininity and masculinity are not concrete and this is where problems arise. "Even within individual countries women...can be differentiated by class, race, ethnicity, religion and life stage" (Momsen 2004: 9). Gender is an ambiguous term, but this ambiguity is appropriate for a concept that differs from case to case.

Gender relates to development because it draws attention to the differences between men and women in communities. The role women play indicates their development as a gender and also shows the development of their societies. Women are more at risk from malnutrition and diseases (Beaudet et al. 2009), which is why the issue of health is important in gender and development. It demonstrates that certain health problems are inherent to women. Understanding these health problems helps to explain why some women's development opportunities are more limited than others.

Case studies – Chun Xu, China and Joana Stănescu, Romania

An opportunity presented itself where I was able to get a perspective of the impact of the population policies from women who remembered their introduction. I presented

my Chinese and Romanian friends with a set of questions which they translated into their native languages. They posed these questions to their mother (in China) and grandmother (in Romania) and from their answers I have made my own case studies. The case studies are anecdotal information; they are not meant for in-depth analysis but they are intended to provide nuance. There are problems with verifying the information and replicating it, but the case studies help clarify the perception of the population policies from women who experienced them first-hand.

Case study 1- Chun Xu, 47 years old, born 06.02.1964 in Zhou Cun area, Zi Bo city, Shang Dong province, China[1]

Chun Xu is the mother of my friend Zhang Duo. In 1979 (when the one-child policy was introduced) she was 15 years old. At the time, she had no particular interest in the policy, but remembers the Deng regime investing a lot of money and labour to promote it with relevant slogans. Through regular radio broadcasts people became aware that having one child was the new requirement, and anyone choosing not to comply would face harsh consequences. Chun Xu recalls an occasion where a villager had a second child after the announcement of the policy; village elders dismantled the family's home and were then awarded by local officials for their outstanding work.

Her opinions on family life have changed since Chun Xu no longer believes a child provides old-age security; rather, it continues life and contributes to the maintenance of family traditions. She states that boys are still preferred to girls and that she is lucky to have had a boy as her only child. When asked how the one-child policy influenced her decision to have just one child, Chun Xu answered that it wasn't up to her and that women had no choice in the matter. She wanted to have two children but because of the one-child policy this had not been possible and she settled for one. Chun Xu worked in architecture and at the age of 23 she gave birth to Zhang Duo. She receives a small subsidy from the government for having one child. She remembers that employees in state-run factories and companies risked losing their jobs if they had more than one child. If workers managed to keep their jobs, there was a possibility that any additional children would not be registered as full Chinese nationals.

[1] Personal communication, 31.10.2011

She believes that since the one-child policy was introduced, women's health has improved significantly. Taking into account China's current demographic situation, Chun Xu thinks that the one-child policy is necessary for China and her closing remarks target the government- it needs to do more to make sure the policy is properly adhered to.

Case study 2- Joana Stănescu, 78 years old, born 22.07.1933 in Zimnicea, southern Romania[2]

Joana Stănescu is the grandmother of my friend Diana-Nicoleta Stănescu. In 1970, (four years after the pronatalist policy was introduced) Joana worked in small-scale farming. She remembers the announcement of the pronatalist policy very well. Joana had thought of having only one child, but after Decree 770 banned abortion on the 1st of October 1966 (Kligman 1998) she was forced to re-think her decision. Joana tried successfully for another child, which brought her total to two. She received a monthly allowance for each child until they reached the age of 16. Joana states that because there was no birth control, abortion had been easily available in Romania before the pronatalist policy. She believes that abortion rates were higher than before even though figures were not properly recorded in official documents.

When asked to remember how the Ceauşescu regime justified the pronatalist policy, she answered, "increased production." This would only be achieved if Romanian women gave birth to more children (the sex of the child was not important). The government emphasised that a growing population would lead to increased production which would naturally lead to development. Joana remembers the slogan "a young society results in progress for all." The Ceauşescu regime wanted to replace its older, slightly stale generation with a young, fresh, socialist society. Although not fully understanding or agreeing with the pronatalist policy, Joana said she respected the law and accepted the changes without any real opposition.

Speaking about healthcare after 1970, she said it had become free for all. Previously hospitals had been located in big cities, but after the policy it was a requirement for hospitals to be built in areas inhabited by a minimum of 10,000 people. Joana believes

[2] Personal communication, 03.11.2011

that women had more opportunities at work and in education. In hindsight, she misses Ceauşescu and the sense of hope he instilled in people about a more prosperous future. She remembers the benefits she received for having more children: paid holidays, provision of nursery schools and paid maternity leave. However, Joana also mentions that people woke up at 5 o'clock in the morning every day and stood in queues to get milk. The juxtaposition of daily life and benefits is poignant because it implies that a life of opposites had become relatively normal.

Health institutions and health problems during the one-child/pronatalist policy

Case study 1 suggests that there was a significant improvement to women's health in China following the introduction of the one-child policy. Unlike Joana Stănescu, Chun Xu does not specifically mention healthcare systems. Joana claims that there were more hospitals, and that healthcare had become free for all after the pronatalist policy. However, despite the increase in hospitals, women continued to have illegal abortions.

Writing in 1985 (six years after the introduction of the one-child policy), Pi-Chao Chen states that there was a significant improvement in the provision of hospitals and clinics. China took extensive measures to give women a greater sense of security amidst the new decisions they would have to make about reproduction. "By 1981 every county had a hospital, and the majority had a...specialised Maternal and Child Health hospital" (Pi-Chao Chen in Croll et al. 1985: 137). Healthcare was structured into three tiers; there were production brigade health systems at the lower level, and county maternal and child health hospitals at the higher level (Pi-Chao Chen in Croll et al. 1985: 137).

Kligman (1998) argues that health provisions in Romania were only available to pregnant women, women who wanted to become pregnant or those who already had children. By law, medical institutions had to "...ensure...attention to pregnant women by clinical...examinations...and to supervise...a woman's state of health in the postnatal period" (Kligman 1998: 80). Most (if not all) health provisions were directed towards pregnant women and those who wished to become pregnant. Those who weren't pregnant (and had no desire to be), were ignored.

Following the introduction of the population policies, women in China and Romania had to deal with a whole new spectrum of health problems. In China, there was a considerable increase in the use of contraception. "The programmes...promoted IUDs and sterilisations...these account for 85 per cent of all contraceptive use" (Pi-Chao Chen in Croll et al. 1985: 137). The government encouraged local pressure on women and families who were not complying with policy rules:

> "A campaign in Guang Dong province in 1979 held discussion meetings for couples who refused to use contraception. Worn down by 7hr a day meetings for 5 months until they complied" (Croll et al. 1985: 45).

There were many cases of forced abortion, either by threats of job loss, having to pay an excess child levy (Croll et al. 1985: 30) or through emotional blackmail where feelings of shame would compel women to terminate pregnancy. There was a difference between rural and urban women, and rural women found it more difficult to accept the one-child policy. However, in urban centres the tendency towards having one child was more commonplace, and in some cities, the policy merely confirmed the unofficial demographic situation. In the west district of Beijing within a few months "...the ratio of one-child families had passed 50 per cent...before...incentives or disincentives" (Croll et al. 1985: 98). In the countryside women were being asked to break with tradition and to set aside the status associated with having more children (Croll et al. 1985).

In Romania, the more children a woman had, the more she would be respected by her local community and government (Kligman 1998). Status was assigned to mothers with many children and the Ceauşescu regime used these women as an example to others (Kligman 1998). Abortions had been available on demand before the pronatalist policy, and were the only realistic form of birth control when natural methods and home-made remedies proved ineffective. Contraceptives were "...neither manufactured domestically nor imported" (Moskoff 1980: 603), which meant that abortions were a normal part of a Romanian woman's life. On average, women had between five and seven abortions during their reproductive years (Kligman 1998: 208).

After abortion was criminalised, women relied on dangerous and often life threatening methods to stop having more children. "In 1971, there were 330,000 spontaneous and induced abortions and about 375,000 in both 1972 and 1973" (Moskoff 1980: 603). Living with lacerations, tears and erosions of the cervix were minor problems compared to the threat of death. In 1965, the number of deaths from post-abortion complications was 47, whereas in 1989 it was at its highest at 545 (Kligman 1998: 215). The total number of maternal deaths more than doubled from 237 to 627 between 1965 and 1989 (Kligman 1998: 215).

In China and Romania, women experienced a multitude of health problems that directly resulted from the one-child policy and pronatalist policies. Health provisions were only available to those women who complied with the restrictions on reproduction. Those that did not were under pressure from local health structures to do so, which created a conflict between state and individual.

Mothering challenges during the one-child/pronatalist policy

From the case studies of Chun Xu and Joana Stănescu it is clear that attitudes towards motherhood and family life changed. Chun Xu no longer viewed children as a means of old age security and Joana Stănescu tried for another child, recognising the benefits available to her and her family. Despite the fundamentally different approaches to controlling women's health, Romania and China offered similar incentives.

Kligman (1998) explains that increased female education, combined with the desire to be more like Western European women, meant that on average, Romanian women had fewer children. "In 1971, girls constituted 51.5% of students at high school. At university in the same year women's share of enrolment was 43.3%..." (Kligman 1998: 25-26). Such figures show that women had more opportunities in education, and can account for the increased rate of female participation in the workforce. However, women often worked at a lower level than men despite their almost identical educational backgrounds (Kligman 1998), and found it difficult to maintain a balance between work and family life. For the Ceauşescu regime, well-educated working women were secondary in importance to women who actively sought to have more children. Writing in 1976 in Bucharest, Trebici highlights the significance of

motherhood in his country: "In Romania, motherhood is acknowledged as a social function and enjoys the protection of the state" (Trebici 1976: 130).

In Deng's China, women were also encouraged to work and be active members of the labour force. Rural and urban women experienced different problems in relation to this change. A rural woman's life was centred around her ability to be a good mother. From an early age children were an investment and could help with household chores (Croll et al. 1985). Employment opportunities were not realistic for rural women given the scope of daily problems. The one-child policy asked women "to practise a degree of family limitation...directly contrary to their interests" (Croll et al. 1985: 73). Girls were made aware of contraception at a younger age than before, and later marriage was encouraged to delay the reproductive process (Pi-Chao Chen in Croll et al. 1985: 147). Similarly, in Romania the pronatalist policy made younger women aware of their future responsibilities to the state. "The prohibition of abortion prompted young women to become pregnant...earlier...better prepared psychologically to tolerate flexibility" (Kligman 1998: 66).

The future opportunities and prospects of young women were tailored to fit the aims of the one-child policy and pronatalist policy. Women were not addressed individually and both China and Romania assumed that women's development needs were homogenous. These assumptions did not reflect reality, and women struggled with new notions of motherhood and new responsibilities towards the state.

Lack of choice during the one-child/pronatalist policy

Chun Xu and Joana Stănescu show that women had little choice in adhering to the population policies. If they chose not to have more children (Romania), or chose to have more children (China) then they would not be eligible for financial aid. In addition, they would almost certainly be ostracised in their local communities.

The choices given to women by the Deng and Ceauşescu regimes revolved around their own goals of national economic development. China argued that it could not develop if its population continued to grow at the current rate as "...plans to...modernise China were thought to be contingent on China's also taking drastic steps to reduce her

population" (Croll et al. 1985: 23). In his address to the World Population Conference in 1974, Nicolae Ceauşescu said "...man is the decisive factor of economic-social progress" (Trebici 1976: 127). The main concern of the population policies was what was best for the state; any positive outcomes for women were believed to follow naturally.

Women's choices in China and Romania came with conditions that were often contradictory to their purpose. At 72.7 percent Romania had the highest rate of female labour force participation in Eastern Europe (Moskoff 1980: 601). However, the degree to which women enjoyed freedom of choice at work is questionable. Women were subjected to mandatory medical exams, including ovulation and pregnancy tests and family planning enquiries (Kligman 1998: 100). Women were constantly monitored by medical cadres at work, and this surveillance intensified if a woman was found to be pregnant.

In China, most women worked in government-run factories and companies making them more vulnerable to coercion tactics. Private decisions about women's health no longer remained personal, and had to be shared with medical cadres at work (similar to Romania). Momsen (2004) emphasises that coercion was most effective "...among workers in state enterprises...women can be forced to abort second pregnancies by threat of loss of jobs...benefits and...imposition of heavy fines...contraception is carefully monitored" (Momsen 2004: 55).

The population policies allowed Romania and China to exert force over women's bodies. They scrupulously recorded details of women's personal lives and the boundary between state and individual no longer existed. The many choices on offer did not benefit every woman and the downside to these choices was clear. Women remained in a state of limbo when it came to fully accepting the one-child and pronatalist policies.

Conclusion

Deng's one-child policy and Ceauşescu's pronatalist policy maintained throughout that women would become more equal to men and have the same opportunities at home and in the workplace. Despite the acknowledgement of inequality, China and Romania

(with the help of their population policies) ultimately used women to start their own drive towards social and economic development. Women's gender needs were assumed to be homogenous and there was little flexibility to cater for differences. By controlling one aspect of women's health (reproduction), China and Romania presumed that women's development would follow naturally with few problems. This was not the end-result for many women; the policies increased female-specific health problems, challenged ideas of motherhood, and limited women's choices at work and at home. As a result, women dealt with a new spectrum of health problems: they had to make adjustments to their views and expectations of motherhood, and they were constantly monitored by the state at work. By harnessing their gender and restricting their biological role, the Ceauşescu and Deng regimes further marginalised women, and created a conflict of interest between state and individual ambitions.

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WILL GMOs SOLVE THE WORLD FOOD CRISIS?

Henrik Liadal Reinertsen

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Close to a billion people in the world today are starving. This problem has escalated, especially within the developing world where food demands do not meet the increasing population density. By using Genetically Modified Organisms (GMOs) in agriculture, farming becomes more efficient, as GMOs can turn unproductive land into productive land. Sufficient food supply needs a quick solution and GMOs are the answer. The yield and quality of food increases, decreasing the amount of starving people in the world as a long-term consequence. By using GMOs to grow more crops, more carbon is sequestrated from the atmosphere, resulting in decreased climate change.

Evidence shows that GMOs increase the food quantity and quality (Fresco 2001). Engineers can modify plants to increase their resistance to pests, and also improve nutritional content (Smithers 2010). In Asia, the growing population density intensifies food scarcity. GMO rice not only increases food quantity and quality (Compass 2008; Chandler 1979), but also reduces impact on the environment by expanding the fertile area of photosynthetic crops.

GMOs mitigate climate change by decreasing the demand for fertilizer. By isolating a certain gene in the crop, farmers are able to grow crops on infertile soil. For example, GMO corn can now grow in formerly unproductive desert areas (Borger 2000; Einset 1996). Larger areas of photosynthetic crops absorb CO_2 and release O_2, reducing climate change by cleaning the air. In other areas with high rainfall, GMO crops that require less fertilizer reduce the risk of polluting waterways from runoffs that result in eutrophication (enrichment of bodies of fresh water by inorganic plant nutrients).

Although the general public assumes that tampering with nature comes with high risks, many of these assumptions have not been proven. Scientists suggest that the benefits of GMOs outweigh the potential risks (Almås et al. 2002). Although some people blame GMOs for increased incidences of allergies, there is no scientific evidence for this

claim (Pusztai & Bardocz 2011), despite the constant widespread use of GMO crops, e.g. soybeans (Shanks 2005). Worldwide, GMO soybeans increased yield ten times between 1997 and 2009 (See Table 1). The growth occurred more dramatically in the US within the same period. As a proportion of total soybean production, GMO soybeans increased from 4% to more than 90%. During this period research shows no negative effects of GMO soybean (GMO Compass 2008).

Table 1: Percentage of GM soybeans produced worldwide and in the USA (GMO Compass, 2010).

	Year	Total Soybean (million hectares)	GM Soybean (million hectares)	GM Ratio
Worldwide	1997	67	5.1	**7.6%**
	2008	91	65.8	**72%**
	2009	90	69	**77%**
USA	**1997**	25.7	3.6	**4%**
	2008	30.1	27.7	**92%**
	2009	31	28.6	**91%**

Research shows that GMO crops will help increase food security, and reduce the environmental impact of conventional agriculture. Although there is no current evidence that GMOs pose a health risk, most scientists believe that if negative impacts are detected, the benefits of GMOs will outweigh their potential risks. Although some people criticize gene manipulation, GMOs specifically hold great promise for sustainable agriculture and decreased food scarcity.

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A POLITICAL ECOLOGY ANALYSIS OF THE WOLF CONFLICT IN NORWAY

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ABSTRACT The wolf is a strongly debated issue in Norwegian society today. A large proportion of the Norwegian population supports the presence of wolves, while the other proportion expresses hatred and fear. This article uses a political ecology analysis to illustrate the economic, political and social aspects which influence this debate. These insights are vital to ensure the future existence of wolves as well as a sustainable relationship with our natural environment.

Wolf management is a highly debated issue which creates division in Norwegian society. Norway is bound by international agreements to protect the wolf as an endangered species, however the current Norwegian wolf population consists of only 32-34 individuals (Wabakken et al. 2011), with the country maintaining the wolf population at very low levels (Andersen et al. 2003). The conflict surrounding this species is affected by a large variety of social and political issues, and educational programs should be implemented to understand this complex debate and contribute to the long-term survival of the wolf.

The relationship between human society and the wolf changed from that of respect to hatred as society transformed from hunters and gatherers to agricultural communities. The wolf thus became a direct threat towards human livelihoods (Lopez 1978). Our relationship with nature also changed with the introduction of Christianity and the Domination Thesis which viewed humans as superior to other species and nature. When John Lock's philosophy of Utilitarianism followed in the 1600s, nature's value became anthropocentric and nature was determined by its usefulness to human society. This also affected the relationship between human communities and the wolf (Kaltenborn & Bjerke 1999; Robbins 2010).

The persecution and hatred of the wolf throughout the North American and European continent is unparalleled in modern history. The wolf has been shot, poisoned, tortured and burned alive for public amusement and eradicated from most of its previous living areas (Steinhart 1996). Wolves came to represent what should be subdued in the human spirit - the beast within man - representing greed, lust, mercilessness and violence (Lopez 1978; Robbins et al. 2010). In Christian mythology the wolf was also presented as evil and dangerous and became associated with undesirable characters in society such as witches, werewolves, murderers, rapists and pedophiles. In later years, the wolf has become a villain in children's stories such as *Little Red Riding Hood* and *The Three Little Pigs* (Hundeide 1996; Lopez 1978).

The perspective on wolves and nature itself has gradually changed in recent decades. As wilderness areas and wolves became scarcer in both Europe and North America, they became worthy of protection not because of their usefulness for society, but because they had intrinsic value in and of themselves. This ecocentric perspective was first proposed in 1949 by Aldo Leopold in his *The Land Ethic,* inspired by an epiphany he had while killing a wolf and witnessing its suffering (Fox & Bekoff 2009; Robbins et al. 2010). The wolf came to symbolize wilderness, but the meaning of wilderness has gradually changed. Some argue that reintroducing the wolf is a process of reintroducing wilderness areas to the world (Robbins et al. 2010). However, others argue that the presence of wolves in Norwegian nature threatens the livelihood of our agricultural society.

The wolf has been a vital part of ecosystems in Norway for centuries, but became functionally extinct from Norway by 1960 due to human persecution. It was protected in 1971, but only during the last two decades was it naturally reintroduced to Norway (Andersen et al. 2003). Still, the return of the wolf has caused increased conflicts with economic activities, especially in relation to depredation of sheep and reduction in wild moose populations (Skonhoft 2005). The sheep industry in Norway has developed in a predator free environment, with two million sheep grazing freely in the summer with little supervision. Sheep are killed every year by large predators, but the losses to bears, wolverines and lynx are in total much higher than the number of sheep killed by wolves (Andersen et al. 2003). The total economic loss of wolf depredated sheep is small, but can have a strong effect on individual farmers (Skonhoft 2005).

The wolf can also cause local declines in game species, such as moose, which is an important animal for hunting in rural areas of Norway. By eradicating all the large predators in Scandinavia, unnaturally high populations of game species such as moose can be maintained (Steinhart 1996). There are negative effects associated with this high game population, such as overgrazing in some areas and increased moose-related traffic accidents. Considering these factors, the decline in game species caused by the reintroduced wolf populations has also limited economic costs for human communities (Skonhoft 2005).

The limited economic implications of maintaining a wolf population in Norway suggests that there are other social and political factors influencing this debate. Even though the majority of the Norwegian population supports a viable wolf population, 10% of the respondents in a study by Lindell and Bjerke (2002) state that the wolf has no right to reside in Norwegian nature. Their research also shows that only one in ten Norwegians would not want wolves closer than five kilometers to their home.

The wolf debate in Norway is presented by the media as a conflict between rural and urban areas. However, there are other social factors that have proven to be more central in the wolf debate (Skogen 2001). This is related to class differences in Norwegian society, different environmental perspectives and rapid changes in rural communities. A study from Hedmark by Kaltenborn and Bjerke (1999) shows the difference in perspectives on nature in three different social groups, where sheep farmers have a much more anthropocentric view on nature than wildlife managers and research biologists who take a more ecocentric view. This also coincides with negative views on the wolf and is documented in other research from both Trysil and Stor-Elvdal by Skogen (2001) and Krange and Skogen (2001).

An anthropocentric view on nature also influences environmental concerns in the sense that these social groups are more engaged in environmental issues affecting their own interests directly. Wolves are not a directly useful resource to humans and are not seen by many as an environmental issue, but rather as a threat to traditional activities and use of forest resources (Kaltenborn & Bjerke 1999; Krange & Skogen 2001). The wolf challenges our ability as a modern society to protect parts of the environment that do

not directly benefit us, but are vital for the functioning of the ecosystem as a whole. As Paul C. Paquet (2007) has stated "ironically, the species once regarded as a threat to our survival is turning out to be a test of how likely we are to live sustainably in the natural world" (p.11).

Life in rural areas is rapidly moving away from primary industry and towards the service sector. This creates a more diverse population in rural areas with a growing middle class and higher education levels. The old Norwegian community that maintained traditional forest activities is gradually disappearing in the rural areas (Skogen 2001). Hundeide (1996) suggests that the wolf has become a symbol of this development in rural communities in Norway, and opposing wolves is associated with support for a traditional way of life. In Stor-Elvdal, young men with little education struggle to find work in a transformed local community, but use hunting and recreation in nature as a link to the old rural ways. The wolf is perceived as a threat to these activities and being opposed to the wolf's presence is part of their cultural identity. The reintroduction of wolves represents another political decision forced upon local communities from the urban elite of society. This social construction of the wolf conflict as a substitute for a deeper conflict creates polarization of the debate and makes conservation of the wolf an increasingly difficult social and political issue (Krange & Skogen 2001; Skogen 2001).

A Norwegian Institute for Nature Research (NINA) report concerning the large predators in Norway states that information campaigns directed towards changing people's values and perspectives on nature could also be effective to create understanding and support for wolves. Learning about the environment should try to sustain new ethics that value the mutual dependence between all life forms and how humans do not have the right to dominate and exploit nature. Acceptance of wolves and the challenges this creates could be a test of the success of such changes in values. Information and education programs should not become indoctrination, but expand people's ability to form their own opinions and critically evaluate issues such as the wolf debate and its social constructions. It is possible to adjust educational efforts to the complex social and political conflicts affecting local attitudes towards wolf management. Giving people the possibility to influence management decisions and

discuss these issues in focus groups could also contribute to reduce conflicts. Such initiatives have proven successful and influential in other countries, such as the US and Sweden, and there are no reasons why they should not have similar effects in Norway (Brainerd & Bjerke 2002).

From this brief introduction into the wolf conflict of Norway it becomes apparent that this is a conflict with deep historical roots, influenced by a vast range of economic, social and political issues. The social construction of the species has created a powerful symbol loaded with meaning and emotion for a large portion of the Norwegian society. It represents a disappearing wilderness, different perspectives on nature and a social conflict between different ways of life. Aldo Leopold once stated that management of wildlife is not about managing the animals; it is about managing people (Bath 2009). Today the wolf's continued survival in Norway has become a social and political issue and a substitute for conflict over deeper values on human relations with the natural world. To ensure the future existence of the wolf, these complex meanings and social constructions must be analyzed and understood before effective measures such as educational programs and conflict resolution can be implemented. The persistence of wolves still challenges Norwegian society economically, socially and politically to value and protect all parts of the natural world and maintain a sustainable relationship with our surrounding environment.

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RIGHTS REGIMES AND THE GAZA FISHING INDUSTRY

(Abridged from original version)

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ABSTRACT Since the Oslo Accords were signed by Israel and the Palestine Liberation Organization in 1993, the fishing zone that was allotted to fishermen on the Gaza strip has been repeatedly and unilaterally reduced by Israel, from 20 nautical miles in 1993 to 3 nautical miles in 2009. This has had negative consequences for the fishing industry in Gaza, an area already critically affected by food insecurity. This paper addresses the problem from the institutional perspective. It assesses the various institutional arrangements that cover or are meant to cover the seas outside Gaza, whether they have been successful or not, and why. We argue that international fishing institutions fail because Palestine's status as a non-state means it falls into a grey area that is unaccounted for in both theory and practice. We also argue that neither the arrangements from peace agreements nor the Geneva Conventions can account for the situation, due to the lack of an international third party to ensure compliance on behalf of Israel. The paper concludes that the institutional resource regime is failing Gaza, the Gaza fishermen and the fish, but sees no prospect of improvement in the near future barring a dramatic change in policy from Israel.

1. Introduction

When the Oslo Accords were signed on the White House steps in September 1993, they were met with optimism, as they were the first direct agreement between Israel and the

Palestine Liberation Organization (PLO). They would serve as a framework for future talks within which the most central issues of the long-drawn conflict would be resolved. A lot of this optimism has since faded, especially after the breakout of the Second Intifada[1] in 2000. As most central questions have never reached full resolution, public belief in the Accords has dwindled and the occupation of Palestinian territories is still ongoing.

The question of Palestinian access to maritime areas outside of the Gaza Strip has arisen since the Oslo Accords have been subject to instability and repeated change. Fishing is a central part of the Gaza economy, and a central nutritional source for a population where only 17% are deemed "food secure" (WFP 2009). The current regulations have enforced a three nautical mile restriction on the maritime areas Palestinian fishermen can access. Following this it has been reported that the annual fishing catches and amount of active fishermen have been severely reduced. At the same time fishing stocks are in a state of peril, due to overfishing in close-shore breeding grounds (OCHA 2010). The question remains: do the property rights structures give Palestinians full ownership over the resources they access?

In heated topics such as the Israeli-Palestinian conflict there is always potential for biases, both in sources and in analysis. To counteract this as far as possible, most of our paper is based on primary research by established and internationally respected sources. As we have not conducted any primary research ourselves, the basis of our information relies on literature searches. The sources of information are from both quantitative as well as qualitative research sources. We contend that Palestinians are not even full owners of the fishing resources they are able to access, due to a special sort of property regime, controlled by Israel as an outside actor.

2. Background

2.1 General outline of the conflict

The Israeli-Palestinian conflict has been a recurring topic ever since the United Nations drafted its Partition Plan for Palestine in 1947, suggesting a distribution of 55% of the

[1] The Second Intifada was the second Palestine uprising, leading to a period of intensified violence between Palestinians and Israelis, beginning in September 2000 and ending roughly September 2005.

land of original British Mandate to Israel and 45% to an Arab state (Bennis 2009). This was immediately followed by the Arab-Israeli war in 1948, after which Israel, the victor, was declared a state on 78% of what was then the British Mandate. War and the threat of war, in addition to Jewish paramilitary terror attacks, resulted in the exodus of more than 700 000 Palestinians from the area that became Israel.

The exact roots of the conflicts are hard to outline. However, it is clear that the 1967 Six-Day War represents a historical benchmark and a framework for current international mediation (Bennis 2009). As a result of this war, Israel occupied the last 22 percent of the original Mandate, taking Gaza Strip and Sinai (later returned), the West Bank and East Jerusalem, and the Golan Heights, from Egypt, Jordan and Syria, respectively. This occupation is still ongoing, although varying degrees of self-determination and autonomy have been given to parts of the Occupied Territories, as a result of the Oslo Accords and their aftermath. Gaza is in a special position because of an ongoing economic blockade and near-complete border closure, that was exacerbated after the 2007 Hamas takeover of control of the Gaza Strip; a result of the 2006 election.

Formal bilateral negotiations have been scarce and often interrupted, and were not established before the Oslo Accords. Neither the General Assembly Resolution 194, which declares the right to return and compensation of the earlier mentioned refugees (UN 1948), nor Security Council Resolution 242, which requires the "Withdrawal of Israel armed forces from territories occupied in [the Six-Day War]" (UN 1967) have been resolved today.

2.2 The Gaza economy and fishing industry

The focus of our paper; the fishing industry, is a sector that provides a high proportion of the workforce in relation to its monetary importance, which amounted to 48 million USD in 2008 (United Nations 2010). As of 2007, the Gaza fishing industry contributed 4% of the National Palestinian GDP, a number including the West Bank (OCHA 2007). The total annual catch has had a general negative trend the last decade, and according to the World Food Programme (WFP 2009) the reduction in fishing yields is as high as 70%.

Challenges facing the economy at present include a high unemployment rate of 40% (United Nations 2010). Another problem correlated to this is the high rate of the population living under the poverty line, which is around 70% (JWL 2011). The current situation sheds light on why an estimated 80% of the population attains its needs for goods and services through international humanitarian assistance.

2.3 Development

The Gaza-Jericho Agreement, one of the treaties following in the wake of the Oslo Accords, established formal access for Palestinians on the Gaza Strip to maritime areas up to 20 nautical miles (nm) off the Gaza shore. This allowed for "fishing, recreation and economic activities" in this area, under certain conditions (MFA Israel 1995). Except for a 1 nm zone next to the Egyptian border and a 1.5 nm zone next to the Israeli, this covered all of the Gaza shoreline.

Since then, the Palestinian access to these waters has been through a series of changes, gradually reducing the accepted distance from the shore from 20 to 3 nm. The latter has been the limit since December 2008, when Operation Cast Lead[2] and the invasion of the Gaza Strip began. The process of regulatory changes was accelerated after the breakout of the Second Intifada in 2000. This is reflected in the pattern of changes to the fishing industry from this point and onwards (see section 4.2)

3. Theory

3.1 Property and resource regimes

In order to answer the question of whether or not the Palestinians have full ownership over the resources they access, we must present the underlying theory. The concept of property differs in its analytical sense from what may be the connotations in daily speech. With property we mean rights structures that help define resource allocation, not concrete objects such as an apartment. In the following we will describe property regimes and resource regimes, in order to lay the foundation for discussing what we argue is a special type of property rights structure in the case of Palestinian fishermen and Israeli regulation of maritime areas.

[2] The Gaza War during the winter of 2008-2009, beginning on 27th December 2008, is known as Operation Cast Lead in Israel.

According to Vatn (2005), a property regime is the "structure of rights and duties characterizing the relationships between individuals with respect to a specific good or benefit stream." Commonly, four such regime types are identified: (1) private property; (2) common property; (3) state or public property; (4) no property – open access.

In (1) a private entity, be it a person or a corporation, has the exclusive access to benefit streams from the resource, in addition to the obligations included in the regime. In (2) a specified group of people in total own the good or the resource, and the property regime describes both who is included and who is not, and the internal coordination of resource use. In (3) we are also talking about a sort of co-ownership, but in the vague form that everyone who is part of the state by definition owns the resource, their access restricted by an elected government that regulates and controls. (4) is a "free-for-all" situation; everyone who so wishes has the access to benefit streams from the resource.

Here is important to underline the distinction between resources and regimes in relation to property: There are no private property resources or common property resources; the same type of resource can be managed in different ways, through various regime types, where - as we have seen - private and common are two options (Bromley 1991).

A *resource* regime includes the elements of property regimes, but introduces an additional aspect, namely, the "rules that govern the transactions concerning the results from the use of the resource" (Vatn 2005); what can actually be traded away by the rights holders, whether the orientation for such trade is entirely towards markets, and so on.

3.2 Ownership

An understanding of property rights requires an understanding of what constitutes ownership. Looking into this reveals more than purely physical possession. Honoré has described 11 elements that together form the basis of full ownership (cited in Vatn 2005):

(1) The right to possess: the right to exclusive physical control. This right cannot be arbitrary.

(2) The right to use: to harvest some resource for own use and so on.

(3) The right to manage: the right to decide how and by whom the resource owned shall be used.
(4) The right to income: to capture the surplus or yield from the resource.
(5) The right to capital: the right to consume, destroy or sell the resources to others.
(6) The right to security: immunity from arbitrary appropriation.
(7) Transmissibility: the right to transfer to successors; inheritance rights.
(8) The absence of term: ownership that runs into perpetuity.
(9) The prohibition of harmful use: ownership does not include a right to harm others.
(10) Liability to execution: the liability of the owner to use the property to settle debt.
(11) Residuary rights: rules concerning what to do if existing property rights are no longer relevant.

Having now laid the theoretical foundation for our topical case, we will move on to the analysis of our research questions.

4. Institutions and their failure: analysis and discussion

4.1 What are the institutions involved, and how are they relevant?

What are the relevant institutions that influence the resource regime in the seas outside Gaza? Using Bromley's (1989: 22) definition - "the rules and conventions of society that facilitate coordination among people regarding their behaviour" - we get a broad scope for what constitutes an institution. As a consequence we are left with quite a complicated web of overlapping institutions to make sense of, so in order to make this process simpler we have chosen to categorise them into three groups: international, national and unilateral institutions. Demarcating the institutions in this way will help us illuminate, in the clearest light possible, their relative influence over the situation.

4.1.2 Institutions: national level

The UN does not recognise Palestine as a state and Israel does not accept that it is an occupying power (ADH Genève 2011). As such, Gaza falls into a legal area that is difficult to define. What is not disputed, however, is that although Israel has withdrawn its occupying forces from the Gaza strip, it has remained in control of the seas off its coast. As effective access to these waters is decided by Israeli Government policy we

have labelled the institutional agreements between Israel and Gaza as "national level" institutions, even though Israel does not consider Gaza or its people as part of Israel.

Although the matter of fishing access has been characterised by a lack of dialogue caused by inadequate or non-existent channels of communication **(**OCHA, 2010), there have been some formalised agreements signed by the Palestinian and Israeli authorities. On paper, these agreements should have offered clear guidelines for Gaza fishermen wishing to access the common pool resource of the adjacent coastal waters.

4.1.2.1 The Oslo Accords

In 1993, through the signing of the Oslo Accords, Israel agreed to withdraw its occupying forces from the Gaza strip and hand over administration to Palestinian authorities (Oslo 1994, Article I). Significantly for this paper, while the Oslo Accords also legislated for Israel to maintain judicial control of the waters surrounding Gaza, Israel was to allow Palestinian fishermen to access waters "extending 20 nautical miles in the sea from the coast in the northern part of the sea of Gaza and 1.5 nautical miles wide southwards*"* (Oslo Accords, 1994, Article XIV).

4.1.2.2 The Bertini Commitment

The next official agreement signed by Israel relating to fishing access, was the 2002 Bertini Commitment (UN 2002), which occurred after UN special envoy Catherine Bertini had submitted a report on the humanitarian situation in the occupied areas. The report sought to find mutually agreeable solutions to the humanitarian problems that were caused by the ongoing conflict, specifically to the measures "implemented by the government of Israel to safeguard its citizens from Palestinian attack" (UN 2002). The report was not binding, and at a general level Israel rejected it, but according to the report Israel had made earlier commitments to ensuring a 12 nm fishing zone (Hadi 2007: 407). This promise was "reconfirmed" by Israel three years later in 2005 during an OCHA (UN Office for Coordination of Humanitarian Affairs) mission to monitor the extent to which the promise had been upheld (OCHA 2005).

4.1.3 Unilateral measures undertaken by Israel

That the agreed limit of Oslo was ever permitted by the IDF (Israel Defense Forces) is disputed by Palestinian Fishermen (OCHA 2010), but it is not disputed that fishing was blocked completely following the Intifada in 2000, and that fishing access has not since reached anything close to the levels permitted by the Oslo Accords. One of the stated goals of the Bertini Commitment was to reach an agreement for re-extending the fishing zone *back* to previous levels (OCHA 2005). However, despite the repeated promises made by Israel to uphold the 12 nm restriction, it was reported by the OCHA follow up to the Bertini report that Israel had failed to do so (ibid.). Even by their own admittance, Israel had only permitted 10 nm rather than the 12 and 20 they had agreed to previously (ibid.).

Upon the election of Hamas to government in Gaza and the abrupt end to the ceasefire with the capture of Gilad Shalit in 2006, Israel again closed off the seas, only to reopen them again later, with 6 nm as the new limit. The final adjustment to fishing restrictions occurred in December 2008, as restrictions were set to 3 nm following the beginning of Operation Cast Lead and the invasion of the Gaza Strip (OCHA 2010). That is the arrangement that is in place today, meaning that the Palestinians are now prevented from accessing 85% of the sea areas they are entitled to according to the Oslo Accords.

It is important to note that whilst the arrangements in the Oslo Accords exist in the form of a bilaterally binding document, there is no such format for the current restrictions that have taken the form of unilaterally enforced institutional change.

4.2 Effects on the fishing industry and resources

The Gaza economy consists of a workforce of approximately 224,300 persons, with a GDP per capita (PPP) of US$2,900 in 2008, and an overall national GDP of 6.641 billion USD in 2008 (JWL 2011). The main contributing sectors to the economy are services (59%), construction (14%), commerce (11%), and agriculture, fishing and forestry (12%) (UNESCO 2010).

The OCHA estimates the potential economic losses from reduced fishing since the turn of the millennium at $26.5 million (2010: 25). At the beginning of the Second Intifada

in September 2000 there were approximately 10,000 licensed fishermen in Gaza; by the start of Operation Cast Lead in late 2008, this number was reduced to 3,500.

The resource itself is now in a "state of peril", as overfishing in shallow waters goes beyond limits of sustainability and depletes breeding grounds (WFP 2009). The 2009 Food Security and Vulnerability Analysis of the occupied Palestinian territory (ibid.) attributes this directly to the increased restrictions, particularly the introduction of the 3 nm zone in 2008: "In the long term, serious environmental concerns exist regarding the sustainability of water and land resources given their current management in the Gaza Strip."

The Food Security and Market Monetary Report (FSMMR) of 2011 reported a total catch of 1,717 metric tonnes (mt) in 2010, a figure 45% lower than in 2008. The 2010 and 2011 catches have been the lowest since 2000, with the exception of 2003. Taking into account the newest restrictions, along with the first OCHA statement of breeding grounds being overfished, it is clear that the lower catches are impacting the Gazans in two ways. Firstly, there is the negative impact of fish caught within the breeding areas, and secondly the economy and livelihoods are bearing the brunt of reduced catches.

Another important point is unveiled when looking at the origin of fish caught. Graph 2 shows that a large quantity of fish is caught in Egypt by fishermen from Rafah, a Gaza city along the Egyptian border. The FSMMR (2011) claims fish caught outside Gaza territory has increased from 60 mt in February 2011, to 177 mt in March of the same year. While Gaza fishermen are taking advantage of the fact that Israel does not have jurisdiction over these waters, this suggests that fishermen have to adapt to the restrictions by relocating - in order to secure their livelihood.

The large amount of fish being extracted outside Gaza borders also suggests that the effects of the blockade would have been considerably worse if the fishermen did not exploit this loophole. The negative ecological effects are evident by looking at the increasing amounts of fish being caught in other territories, while the overall total amount caught is still decreasing. This situation is not sustainable for two reasons: ecologically, due to the consequences to close-shore breeding grounds; economically,

because of the relative importance of the Gaza fishing industry to the overall Palestinian economy.

4.3.1 The Oslo Accords and fishing "rights"; institutional stillbirth

The Maritime zones set at the Oslo Accords and Bertini Commitment represented compromises that were apparently acceptable to both Israel and Palestinian authorities. Why then were they never fully implemented? The answer is relatively simple to find in structural realist theory: implementation was entirely reliant upon Israeli and Palestinian compliance, especially of the former, as Israel's enormous military superiority gives it a larger potential to make or break the rules (Mearsheimer & Walt 2007). When a deal is reached between two long-term enemies engaged in a heated dispute, and the role of enforcement is essentially taken by one of the parties involved, common sense tells us that the deal breaking down is to be expected. It would have been remarkable if Israel had stuck to the Oslo Accords given that the following decade saw repeated violent exchanges between the two sides.

Realist theory predicts this when it argues that security takes priority above all else, whether it is international law, economic concerns, institutional agreements, ethical concerns, etc. So when a state such as Israel has the ability to further its security interests, it will do so in the absence of any power capable or willing to stop it. Never is this more true than in a conflict, and especially one as long running and impassioned as this, where there have also been repeated attacks and operations inside Israel from the Palestinian side. This is demonstrated in practice by the way unilateral restrictions have been implemented in disregard for previous commitments to Palestine and international law. Such unilateral measures have been stated as having increased security as their motivation, and we will now take a closer look at two sides of how security applies to the situation.

4.3.2 Unilateral security assessed: narrow, wide and "wikileaked"

In the narrowest sense it is hard to argue that increased restrictions on Palestinian maritime access will have a detrimental effect on Israeli security, as it reduces the total area the IDF needs to patrol and control for weapons smuggling, and allows for control

closer to the shore. The negative effects on the Gaza fishing industry are not connected in any direct way to this narrow level of security and as such can be disregarded here.

Widening our perspective somewhat, the effects on Palestinian industry and nutritional access of course have their ramifications. By introducing a model (Fig. 1) that suggests how restrictions can legitimize themselves, we can bring these socioeconomic effects into the equation.

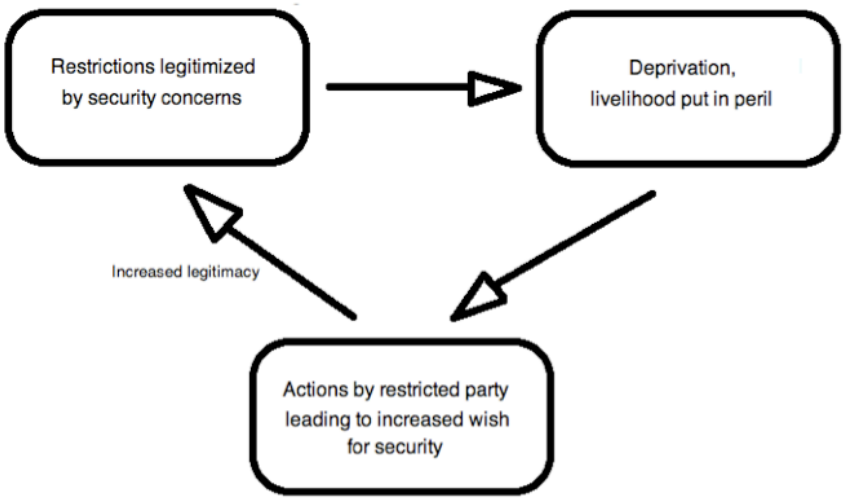

Figure 1: Self-enforcing security measures

Restrictions can take part in a cycle where they lead to their own reason for being; taking part in the creation of the circumstances that they seek to deal with. When worsened socioeconomic factors due to restrictions lead to offensive action by a Palestinian entity, for example due to desperation or provocation, the argument for introducing restrictions grows stronger, as long as the legitimizing factor is a wish for security. As such the measures are made legitimate by their own consequences - the institutions affect actors that again affect the very same institutional structures.

4.3.2.1 A wider perspective

The international society does not consist of one singular bilateral relationship, that between Israel and the Palestinian territories. A lot of other actors are directly or

indirectly involved in the conflict: a total of 33 UN countries do not formally recognize Israel, among them neighbours Syria, Lebanon and Iran. The emotional connection to the conflict extends way beyond the Sinai Peninsula in the west and the Dead Sea in the east. Israel is an important US ally and receives 25% of its foreign aid budget (Bennis 2009). Lastly, a large amounts of diaspora Jews are engaged in the case for re-establishing historical Israel within secure borders, whilst connections have been established even between the Palestinian plight and the 9-11 terrorist acts in the US, through Osama Bin Laden's strong identification with the former (Mearsheimer & Walt 2007). It should be clear that actions by the two parties have great consequences beyond their borders.

In such a perspective the argument for increased Israeli security is much more debatable. When progressively stronger restrictions on maritime access are part of a blockade that leads to a "devastating impact on the economy of Gaza and livelihoods of the population" (WFP 2009), a conclusion reached by several UN factions as well as human rights organizations (OCHA 2010; Amnesty 2010), there is reason to believe regional animosity towards Israel will increase. John Mearsheimer and Stephen Walt (2007) suggest how Israeli foreign action is actually *reducing* its own regional security, as well as endangering US interests.

4.3.2.2 An alternative motivation

Structural realist theory also offers us a basis for considering possible alternative motivations for Israeli restrictions – outside of obvious short-term security concerns. Here it seems natural to point to the possible intention to deliberately repress the Palestinian economy, as strongly indicated by the content of the November 3, 2008 cable from the US embassy in Tel Aviv, exposed by Wikileaks: "Israeli officials have confirmed to Embassy officials on multiple occasions that they intend to keep the Gazan economy functioning at the lowest level possible consistent with avoiding a humanitarian crisis" (Aftenposten 2011). The Israeli security organ National Security Council is described as abiding "by the principal that Gaza should receive just enough money for the basic needs of the population but it is not interested in returning the Gaza economy to a state of normal commerce and business."

A structural realist approach will here offer an explanation as to how the creation of "legitimate repression" is directly beneficial: It implies a relative loss to Gaza and Hamas, and as such a relative gain to Israel. Although increasing the propensity for smaller-scale terrorist acts, measures to repress the economy will significantly hinder the buildup of true Palestinian political and military power.

5. Gaza fishermen: True owners?

We have seen that the involved institutions in different ways are failing in securing the fishing areas for the Palestinian fishermen, due to the anarchic structure of the international system causing a lack of compliance; due to international multilateral institutions being state-centric in their formulations; and due to the relative power-imbalance between the two involved parties. We will now move towards asking whether the property relations are such that one can even talk about Palestinian ownership of the fishing resources that are actually accessible at any given time. In order to do this, the involved regime structures need to first be described.

We argue that none of the four property regime types mentioned earlier fully cover the situation at hand. Although fishing within the accepted zones (at any given time) is not regulated and has traits of open access, there is definitely regulation involved in the form of repeated change of zones by the Israeli government. As such there are also traits of a state (or public) property regime. However, this case is special in that the regulated population is completely external to the state apparatus and as such to the collective ownership that normally is implied in state property regimes (Vatn 2005). Following from this the affected population does not have any sanctioning power towards decision making in the form of elections. The Israeli state is regulating a resource outside of an area that is formally recognized as subject to Israeli autonomy (UN 1982). For these reasons we will introduce a fifth type of property regime, *alien property*, describing regulation of benefit streams from a resource that lies outside of state jurisdiction.

Using Honoré's definition of *full* ownership we will see that there is reason to question the Palestinian ownership even within the established fishing zones: The first point implies that control cannot be suddenly and arbitrarily terminated. When limits of zones

are reduced from 12 to 3 nm, without involving Palestinian participation, this is not the case. Point six follows in the same vein, as through this parts of the resource appropriated arbitrarily.

Points four and five are also unfulfilled. The export blockade on Gaza directly prevents the right to sell the resource (fish) to others, affecting the possibility of full economic yield. There is of course internal sale on the Gaza Strip, but when consequences of the regulations are that a lot of the fish for consumption now must be imported from Israel, and when prices in the marketplace have changed to a level that a lot of Palestinians cannot afford, due to lower catches (OCHA 2007), one can question the relevance of these sales for the full right in Honoré's definition.

6. Conclusions

Despite the complicated array of institutional structures that purport to cover and protect the Palestinian fishing rights in the Mediterranean, Palestinians are nevertheless left without what can be defined as full access or ownership over their resource. We argue that this is because the international laws and national level agreements have been subsumed by unilateral restrictions dictated by Israeli security interests; an outcome explained by the state of anarchy of international society, where there is no global policeman to coerce offenders into compliance.

We have then argued that the international agreements that have sought to solve situations, such as the Israeli-Palestinian conflict, do not fit into any of the conventional understandings of what constitutes an institution. Therefore, we introduced a fourth category, "optionable rules" - laws with all of the formalities of a rules but with none of the sanctioning force, ones that a Realist might be tempted to describe as merely rhetorical.

Finally, we have made the argument that there is reason to contend that Palestinians are not full owners of the fishing resources even inside of the accepted zones. The property regime constitutes a highly untypical one, in that the resource is controlled by an external third party, that has no interest in the stakeholders or the resource itself, nor is subjected to their elective power. Consequently, it does not fit easily under any existing

type of property regime defined in the literature. Again new terminology is required to do justice to the situation, and we have coined the term "alien property regime". We have found that this sort of property regime has been socially and economically damaging to Palestine, ecologically damaging to the resource, and arguably detrimental to Israel's relationship to the international community.

However, there is no easy escape. Even if Palestine were to achieve statehood status from the UN, there is no evidence that Israel would prioritise international law, fishing or otherwise, over its security interests, nor that the international community has the will to force it to do so; history is testament to this. The same goes for the possible Palestinian state. As a result, we predict the Gaza fishermen will continue to be held hostage to this alien regime for as long as Israel believes its maritime restrictions serve its security purposes, regardless of international pressure or its negative effects on Gaza, the Gaza fishermen and the fish.

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SLASH-AND-BURN PRACTICE DESTROYS AGRICULTURE

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For millennia, clearing forests for fields has been an agricultural practice. Today, slash-and-burn is the standard in developing countries. Between 250 and 400 million families depend on slash-and-burn practices to sustain their agriculture (Wakeling 2011). With burgeoning populations and diminishing forests, the long-term impact of slash-and-burn threatens sustainable development: soil degradation and water loss jeopardizes food security. Cutting and burning the forest to improve agriculture decreases the crop supply because of deforestation.

Deforestation reduces the positive effect of rainfall because the former takes away the forest's ability to transpire water. Transpiration evaporates water through the leaves and moisturizes the atmosphere. When the water vapor reaches a certain height, and a certain temperature, the water condenses and forms clouds, which then precipitate. The water infiltrates the soil and is absorbed by tree roots, enabling the tree to transpire, and thus completing the "water cycle" (Smith & Smith 2001). Slash-and-burn stops the water cycle and reduces rainfall, thus the rain seasons, e.g. monsoons, become a greater factor for farmers.

Excessive rainfall leads to runoff and erosion in areas where farmers practice slash-and-burn. Research highlights the surface structure of the soil to be "one of the main factors controlling runoff and subsequent water erosion in cultivated soils" (Vaezi et al. 2010). The forest's surface has a "sponge effect", where roots and forest litter soak up the water, which increases the soil's holding capacity, preventing excessive runoff (Bruijnzeel 2004). Slash-and-burn takes away this "sponge effect". The soil retains the water, but receiving too much water will exceed the soil's holding capacity, and flooding will occur (Bruijnzeel 2004). The flooding will destroy the crops and threaten food security. The burgeoning populations magnify the previously mentioned problem of food security in developing countries.

Because food demands are increasing, the farmers need to produce more crops. Farmers are dependent on nutritious soil for growing crops, and the slash-and-burn practices are a cheap way to fertilize the soil. Therefore, there is no alternative other than slash-and-burn for poor farmers, who cannot afford modern practices, e.g. expensive genetically modified seeds, to supply food for growing populations. However, removing the forest will take away the forest's ability to give sustainable rain and the soil's ability to retain water. It does not matter if the soil is nutritious if the crop is destroyed by either drought or flood. The poor farmers need to find a way other than slash-and-burn to fertilize the soil.

The impact slash-and-burn practices have on food security is worth our attention. Slash-and-burn is standard practice in developing countries with rapidly growing populations that depend on subsistence farming. Although both Africa and Asia practice slash-and-burn, the continents are inherently different. The former has poor soils and unpredictable rainfall, the latter has predictable, but excessive rainfall (monsoons). The farmers need to improve their agriculture to satisfy the world's high food demands, but as they are too poor to use alternatives other than slash-and-burn to manage their soil, they end up destroying the ecosystem and creating droughts and floods.

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POST FUKUSHIMA FOOD SECURITY IN JAPAN

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ABSTRACT Over a year after Japan's earthquake and tsunami on 11th March 2011, the Fukushima power plant is still in the recovery process. The radioactivity is affecting agricultural production and the Japanese government has recently tightened the existing regulation on the radioactivity level of food items. While consumers demand safe food with minimum radioactivity, the safety regulations are unnecessarily strict in the eyes of local producers. This paper warns that the tight regulation on radioactivity will further affect Japanese food self-sufficiency and lead to the decline of Japanese agriculture.

1. Introduction

Over one year has passed since the Fukushima nuclear power plant crisis in Japan on 11th March 2011. Thousands of people still remain in temporary shelters. Meanwhile, the Japanese government has recently renewed and tightened the existing regulations on the permissible level of radioactivity in food, to rebuild the confidence of domestic and international consumers. This means that beyond Fukushima prefecture (which received the most severe radioactive damage), even in areas outside the evacuated zone, agricultural products are under new scrutiny. This has led to widespread negative effects across the agricultural industry.

Questions remain about the scientific basis of the new regulations and its consideration of the local economy. Soon after the enforcement of the new regulations, an excessive amount of radioactivity was found in some food items that were permitted to be traded under the previous regulations. The shock of this finding continues to generate suspicion among consumers. On the other hand, due to the strict new regulations, tons of food are thrown away and many of the farmers who have strived to recover from the damage are facing a severe financial challenge. Subsequent trade bans and the deteriorated reputation of Japanese agriculture have made farmers gravely uncertain

about their future. Japanese agriculture, already in a state of decline, has taken a huge blow. The impact of this policy on long-term food security in Japan is immeasurable.

This paper analyzes the new regulation on the level of radioactivity (cesium-137[1]) in food items from the different perspectives of three main actors - consumers, producers, and the government - and explains its long-term consequences for national food security in Japan.

2. Fukushima Daiichi nuclear disaster

Fukushima Daiichi Nuclear Power Plant was established in 1971 by Tokyo Electric Power Company (TEPCO 2012). It was one of the oldest nuclear power plants in Japan (TEPCO 2012). The plant was hit by a 9.0 magnitude earthquake and a subsequent tsunami on March 11th, 2011. The calamity disabled the reactor cooling systems, leading to nuclear radiation leaks, and forced residents within 30 km from the plant to evacuate. Referring to the International Nuclear and Radiological Event Scale, the Japanese government rated the accident at 7, the highest level, which indicates that it was the largest nuclear disaster globally since Chernobyl in 1986 (Investigation Committee on the Accident at the Fukushima Nuclear Power Stations 2011).

A significant amount of radioactivity was released onto the ground and into ocean water, contaminating essential food products including drinking water, milk, rice, vegetables, livestock and seafood. Almost immediately after the incident, the government declared a regulation on trading agricultural, marine and livestock products from the region. Subsequently, in December 2011, the government declared new and much stricter regulations to be enforced beginning in April 2012 (MHLW 2011). While the majority of consumers support the tighter regulations, many farmers find the regulation too restrictive and a threat to their reputation and income.

3. Policy analysis

3.1 Implementation

[1] Cesium-137 is a radioactive isotope of cesium which is formed as a byproduct of nuclear fission. It is one of the most harmful radioactive isotopes for human health.
(source: Centers for Disease Control and Prevention)

The new regulations have been enforced since April 1st 2012. According to the Ministry of Health, Labour and Welfare (MHLW), which is in charge of the restriction, "Based on current scientific knowledge, commodities that meet current provisional regulation values (on cesium) are considered to be safe, and food safety is basically secured. However, to achieve further food safety and consumer confidence, Japan reduces the maximum permissible dose of cesium from 5mSv/year to 1mSv/year[2]" (MHLW 2012). To meet this level, the MHLW has reduced the capacity of radioactivity in each food item from 500Bq (Becquerel[3])/kg to 100Bq/kg (10Bq/kg for drinking water, 50Bq/kg for milk and infant food) (MHLW 2011).

This means that each food item must contain five times less cesium now than at the time of the nuclear disaster. The local authorities check the level of cesium on each sample from each district once a week. If an excess level of radioactivity is found in a particular food item, the producers from the same district cannot sell that item in the market until the level goes below 100Bq/kg. The producer or the local authority is required to destroy the "polluted food" under the instructions of the MHLW (MHLW 2011).

3.2 Obscure safety level

The acceptable level of radioactivity in food is based on a figure that was created 25 years ago. Right after the Fukushima nuclear accident, the provisional limit of radioactivity in food items was declared by the MHLW, based on the advice of the International Commission on Radiological Protection (ICRP). According to the ICRP's report, "guideline levels have been developed by the Codex Alimentarius Commission[4] for use in international trade (FAO 2011; WHO 2006)" (ICRP 2011). The Codex guideline suggests to limit the yearly dose of cesium137 to 500Bq/kg for the first year,

[2] Sievert (Sv) quantitatively evaluates the biological effects of ionizing radiation. For example, an X-ray health check gives 0.6mSv (milli Sievert) and a one way flight from Tokyo to Paris gives 0.1mSv to the human body (source: Centers for Disease Control and Prevention).

[3] The SI unit of "activity" is Becquerel (Bq), while that of "specific activity" is Bq/kg. One Bq is defined as the activity of a quantity of radioactive material in which one nucleus decays per second (source: Centers for Disease Control and Prevention).

[4] The Codex Alimentarius Commission is established by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) to ensure fair practices in the international food trade (Codex 2012).

and to reduce it to 100Bq/kg for the following years. However, the Food and Agriculture Organization (FAO) that organizes the Codex Alimentarius Commission, quoted the same guideline made in 1987 in their 1991 report (FAO 1991). This guideline therefore does not reflect scientific developments made during the Chernobyl recovery process.

Also, there is a lack of empirical data related to acceptable levels of radioactivity. The Food Safety Commission of Japan (FSCJ) states that, "based on the current scientific knowledge, more than around 100mSv of the extra cumulative effective doses of radiation during lifetime could increase the health risk" (2011). However, they acknowledge, that this is not a limit. Health effects are difficult to verify based on the current available knowledge. It is difficult to actually verify the causality between exposure to radionuclides and an illness that occurs decades later.

This limitation of empirical data forced the government to make decisions with minimum risk and with the highest precaution. Taking this assessment into consideration, the MHLW has reduced the maximum permissible dose from 5mSv to 1mSv per year in the new regulation. Both the FSCJ and the ICRP agree that 1mSv is a very secure figure (FSCJ 2011; ICRP 2012). To meet this lower level of radioactivity exposure, the MHLW concludes that each food item must contain less than 100Bq/kg of radioactive cesium 137 (MHLW 2011).

However, it is not resolved why exactly the current regulation should be 5 times stricter than the first year after the earthquake, in spite of the FSCJ's claim that the value should not vary whether in an emergency or in a normal situation. The MHLW responds to this criticism by saying that, "the amount of radioactivity in crops reduces considerably as the time passes by" (MHLW 2011). In other words, since there is less radioactivity present, the value of the maximum permissible dose should also be lower. This explanation explicitly shows that the value does not take human health into account as a priority. Whether there is a high or low rate of cesium in the food, the amount the person can take should not vary. This fact suggests that the update of the regulation is merely a manipulation of numbers.

In addition, applying universal rules for all food types does not make sense. 100Bq/kg for all food items except water and milk is too strict a measure. These arbitrary numbers fail to make any sense for consumers or farmers. The authorities should provide more careful calculation and detailed categories to regulate products. The basic food items and nonessential grocery food items should be distinguished and have different levels of restriction to be fair to producers. Such rough calculations are not good for either consumers or farmers.

It should be pointed out that the MHLW has intentionally ignored the additional important advice from the ICRP and Codex, apart from the guideline values. Both the ICRP and Codex suggest adjusting the restriction level by taking into account social and economic factors. Nonessential items such as spices, "represent a very small percentage of total diets and they would contribute very small additions to the total dose. Application of the guideline levels to these products may be unnecessarily restrictive" (Codex 2011).

The ICRP report also warns about the risk of being "unnecessarily restrictive." It specifically provides the possibility to set higher criteria to preserve local production, "which may be deeply embedded in traditions or essential to the economy of the entire community" (ICRP 2009). The report further show the case study in Norway: the reindeer meat produced by the Sami population was given a more tolerant restriction level after the Chernobyl accident in order to preserve the indigenous culture[5] (Liland 2004). But the MHLW has not taken this advice into consideration.

Furthermore, authorities have tightened the level of radioactivity, "to meet the international standards". However, there is no international unified standard. Due to its high criteria, not all countries follow the Codex standard but each nation-state (or region like the EU) has a separate standard on each product, and this varies greatly. The new regulation made Japan one of the strictest countries on radioactivity. For example, the United States sets a uniform limit of 1,200Bq/kg for all food while Japan restricts

[5] In Norway, the restriction level on Cs-137 was set up to 600Bq/kg for food, in 1986. The level was raised to 6000Bq/kg for reindeer meat. The decision was based on the fact that Norwegians in general consume very little reindeer meat per year, and there was a political will to maintain the original way of life of the Sami indigenous people (Liland 2004).

radioactivity at 100Bq/kg. Even after Chernobyl, the restrictive level was at 600Bq/kg in Norway in 1986 (Liland 2004).

Apart from the ICRP, Japan should refer to countries such as the Ukraine and Belarus and their experiences of Chernobyl. These countries have suffered high death rates since there was no restriction on radioactivity in food after the accident (WHO 2005). Today they have very detailed categories of food with each permissible amount of radioactivity. The regulations should also reflect the Japanese diet. For example, in Japan the majority of the population consumes more rice than potatoes or flour, and more fish than meat, compared to the Western diet. Hence, even the international standard is required to be customized to apply to the Japanese population.

However, the discussion of the international standard or scientific empirical data is carried out far away from those affected the most by this regulation. The most affected people are the farmers and fishermen from the rural parts of Japan, and they are striving to protect their land and the products from pollution and reputational risk.

3.3 Reputational risk and compensation

One of the key issues of the regulation is the producers' compensation for the loss of sales. The revenue loss due to the restriction is compensated for 100% by TEPCO. The government is obligated by law to back up the payment in case the company cannot pay. The focal point of discussion is the compensation for the loss caused by bad reputation. Due to the deteriorated reputation of the food product, even if the product passes the radioactive test, consumers avoid the risk of eating “made in Fukushima” food.

Due to the new stricter regulation, farmers are very afraid of further deterioration of their reputation. This is because every time excess radioactivity is found, the media broadcasts the source negatively and today’s consumers are very sensitive about the cesium level. In 2011, an excess amount (more than 100Bq/kg) of cesium was found in products from only 545 farmers (2.3% of all farmers in Fukushima). 97.7 % of the products are considered safe (Mainichi News 2012). However, this information was not sufficiently delivered to the consumers.

Although TEPCO covers the reputational risk as well by comparing the sales from last year (Loss=Total revenue of 2010*reduction rate), its long-term policy is unforeseeable. Also, the calculation for fair compensation takes time, and to prove causality is often difficult. As thousands of victims are affected by this accident, the payment itself has been delayed. Furthermore, expensive machinery and chemicals to clean the products are voluntary and not under the compensation. While the wholesaler and consumer demand stricter levels, the farmers from the affected regions are compelled to purchase equipment for their survival.

In the meantime, to negotiate with the authorities and TEPCO, the National Federation of Agricultural Co-operative Associations (JA) has taken a major role as a collective body. While the compensation by TEPCO has been delayed, JA has temporarily financed and supported the farmers, and initiated campaigns to improve the reputation of made in Fukushima agricultural products.

3.4 Information sharing

Before the incident, the level of radioactivity in food was never a focus of discussion in Japan. After the incident, people started to learn about cesium and other radioactivity in their everyday life, through the media.

Private mass media plays an important role in educating consumers about the danger of radioactivity. It has created confusion by both supporting and criticizing the government policy. Through the infiltration of the internet, the information about food safety and policy has become much more accessible. On the other hand, it has flooded the society with too much contradictory information, and people have become confused and highly skeptical. Also, the information gap between the urban young consumers and rural elder farmers should not be overlooked.

Especially after the Fukushima accident, people no longer have faith in official information. Compared to the information from private media, official information is difficult to reach and less comprehensible. The Consumer Union of Japan has sent an official complaint to the ministry about the “lenient restriction” for the first year after the earthquake, and claimed to make a more detailed restriction on each product

considering Japanese food culture and to share more information with the public (Consumers Union of Japan 2011). But consumers need a clear portrayal of the new regulations. It is also important to monitor the effect of the new regulations on popular sentiment.

3.5 Impact on long term food security

The new stricter restrictions on cesium levels will decrease the potential risk of long-term health effects for consumers. The impact on the domestic agriculture is clearly immense, both immediate as well as long-term. The earthquake, the tsunami and the nuclear disaster, directly damaged 37,700 farmers from 10 prefectures, including Fukushima. After one year, 70% of them (26,400) have resumed farming (MAFF 2010). However, many of them are still in an unstable situation. The enforcement of the new regulation will surely hit the shrinking Japanese agricultural economy.

According to the 2010 report from the Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan has experienced a rapid drop in its agricultural population. The total number of farmers in Japan has decreased as much as 22% (747,000) in the last 5 years, and it was 2,606,000 in 2010. Consequently, today Japan holds nearly 40,000 ha of abandoned farmland. The report estimates that this trend will accelerate and the number of farm owners will decrease to 580,000 by 2030 (MAFF 2010).

At the same time, the average age of a farmer is estimated to go up from 64.9 in 2010 to 71.7 years old by 2030. Due to the collapse of the family farming style, the number of one-man farms run by an aged farm owner over 65 years old is increasing rapidly. Today, 50% of farm owners do not have successors (MAFF 2010). This data shows that even before the Fukushima accident, the situation was critical. While local farming populations are decreasing, larger commercial farming is increasing. However, the land in the Japanese archipelago is rather hilly and is not well suited to large-scale farming. As a result, the population tends to depend more and more on imported food.

In 1965, Japan was producing 73% of food (calorie base) for its own population. Due to the rapid shift of industries towards manufacturing and high technology, the agricultural population has steadily decreased, and so has self-sufficiency. Today,

Japanese food self-sufficiency by calorie is merely 39%. As much as 61% of calories consumed in Japan come from imported food (MAFF 2010).

However, even under this trend, the country has kept a sanctuary for rice. 99% of rice consumed in Japan is produced domestically (MAFF 2010). There is a cultural reason behind this policy. The staple food in Japan is a special type of rice (sticky, short-grain rice) that is produced only in Japan. 20% of this rice is produced in the North Eastern part of the country, around the Fukushima region. Even though the Japanese diet has become increasingly westernized, Japanese rice is still an important food staple for the Japanese population. To sacrifice farmers and rice fields in this region will certainly bring a critical food crisis in Japan.

4. Conclusion

Both consumers and producers in Japan are shocked and outraged by the nuclear power plant accident. The damage of the devastating earthquake has been magnified due to this man-made crisis of nonsensical regulation of agricultural products. The government of Japan has to take full responsibility to protect the citizens from nuclear pollution as well as to provide a long-term financial support to give individual farmers a future prospect.

The ultimate desire of both consumers and producers is the same: to return to normal. Consumers want to support farmers from Fukushima and the farmers want to deliver safe food to their end customers. However, the absence of scientific knowledge about the radioactivity and the exaggerated media coverage are creating misunderstandings and confusion.

Extensive research on radioactivity is urgently required to evaluate the long-term effects on health. Based on the proper research data, the level of permissible radioactivity should be adjusted realistically rather than being unnecessarily restrictive. Considering the unique food culture in Japan, the MHLW should calculate the acceptable levels of cesium more accurately on each food item, based on the experience of other major nuclear accidents, such as Chernobyl.

The authorities must provide citizens with an understanding of radioactivity and its risks. The government should take the initiative and reach out to the consumers to update them with the latest information in a comprehensive language. The campaign to improve the image of products made in Fukushima through the media should encourage the consumer to buy the products that pass the safety level.

In addition to the top down approach from the authorities, Japan requires a nationwide bottom up approach to food safety. Through organizations like JA and NGOs, public campaigns will certainly improve the image of Fukushima products. The consumer in Japan should evaluate eating local food, and avoid imported products that often carry their own problems. Through grassroots workshops and events, the risk of imported food dependency should be portrayed in a bigger picture and should be shared among citizens. People should be aware that by eating local food and supporting local farmers, they will positively contribute to both the global environment and the local economy. Eventually by supporting local farmers, Japan can revive from long-term economic stagnation and begin to repair the damage of the nuclear catastrophe.

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DEVELOPMENTS IN FOREIGN POLICY STRATEGIES SINCE WORLD WAR II: DENMARK AND SWEDEN

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ABSTRACT Denmark and Sweden are relatively similar countries, but after World War II they developed different foreign policy strategies. Despite Sweden and Denmark's different experiences during World War II and their distinctive foreign policy strategies in the post-war era, they participate in similar ways with converging policy outcomes in the present Afghanistan war.

During World War II, both Denmark and Sweden had neutral strategies. By not choosing sides in the conflict the countries could stay out of the war. In Sweden's case the strategy was successful (Åselius 2005). The country managed to stay out of the war and remain neutral. This was not the case for Denmark. Even though they claimed neutrality, Germany invaded Denmark on April 9th 1940 (Rasmussen 2005: 74).

When World War II ended, many countries reevaluated their foreign policy strategies. In Sweden's case this evaluation did not lead to a change in strategy. Sweden remained free from alliance in times of peace, in order to remain neutral in times of war (Agrell 2012). The positive experiences of the neutrality during World War II, and Sweden's geo-political position as a close neighbor to the Soviet Union influenced their foreign policy. Denmark's neutrality, on the other hand, failed to keep them out of World War II. Therefore, Denmark adapted a post-war strategy of alliance and joined the North Atlantic Treaty Organization (NATO) (Rasmussen 2005). During the Cold War both Denmark and Sweden kept a low profile internationally. Due to their small size and geographical placement, both countries wanted to avoid drawing attention.

The end of the Cold War led to major changes in world order. Denmark chose to take an active role internationally and participated in several military operations. Sweden, on the other hand, only participated with peace forces through the United Nations (UN), and did not take part in military operations (Dahl 2006). This was also the case in

Afghanistan when Sweden joined the NATO-led International Security Assistance Forces (ISAF) contributing few soldiers with support functions only (Agrell 2012). Throughout the operation in Afghanistan, ISAF has changed their strategy. This resulted in Sweden increasing their contribution to 375 soldiers in 2006. Because the ISAF forces adopted active anti-insurgency measurements, the Swedish troops were led into battle for the first time in 200 years (Agrell 2012: 110-111). In contrast, when comparing to population size, Denmark has been one of the most substantial contributors in Afghanistan. They participated in both the initial Operation Enduring Freedom and with ISAF forces. Today they have nearly 700 soldiers in Afghanistan (Saxi 2011).

In conclusion the different experiences, along with geo-political positions, have led to different foreign policy strategies in Denmark and Sweden. Whereas Denmark has played an active role in international military operations since the end of the Cold War, Sweden has stayed neutral and has only participated in peace-operations. Despite these different strategies, Denmark and Sweden participate in quite similar ways in Afghanistan. This shows that regardless of the difference in strategy, foreign policy outcomes are growing closer and leaves us questioning whether this trend will continue.

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POLITICS IGNORES SCIENCE: ENVIRONMENTAL SECURITY VS POLITICAL ECOLOGY – SCHOOL IN DEBATES ON LAND DEGRADATION AND VIOLENT CONFLICT

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The academic schools of Environmental Security and Political Ecology offer two competing views on the effects of land degradation on the start-up and existence of violent conflicts. This paper will compare and contrast the methodologies of the two schools, and their influences on politics. While the conclusions of the Political Ecology School are backed with more research, the conclusions of the Environmental Security School affect policies to a much higher degree.

The Environmental Security School and the Political Ecology school both study the links between land degradation and conflict, but they come to different conclusions. The Environmental Security School argues that there is a causal relationship between land degradation and conflict (Homer-Dixon 1994: 39). This causal relationship is established when land degradation leads to social effects, like farmers losing some of their income, which leads to different conflicts like arable land-conflicts (Homer-Dixon 1994: 31). On the contrary, the Political Ecology School does not see a causal relationship between land degradation and conflict, but views the relation to be much more complicated. Accordingly, the effects of environmental stresses like land degradation depend on numerous factors, such as how economically developed a country is and how political power is distributed within it (Benjaminsen 2009: 154-155). The conclusion of the Political Ecology school is supported by empirical evidence, which so far has not found any causal link between land degradation and conflict (Benjaminsen 2009: 155).

The Environmental Security School also generalizes conclusions based on case studies (Rønnfeldt 1997: 475). Homer-Dixon (1994) supports the causal link between land degradation and conflict from case studies. In contrast, political ecologists largely emphasize the uniqueness of all cases and the importance of understanding the social

and political context of a case (Benjaminsen 2009: 154-155). The Political Ecology School's view is in line with the general principle of social science, which states that results from a case study apply only to the case study in question.

Despite the severe methodological problems, the Environmental Security School has gained more influence over international environmental politics than the Political Ecology School. The Environmental Security School has attracted the attention of key states and institutions that have shaped their environmental policies according to the arguments of the Environmental Security School. For example, potential global security threats caused by environmental problems climbed high on the US foreign policy agenda when Clinton was president (Benjaminsen 2008: 820). In contrast, the arguments of the Political Ecology School have not attracted the attention of key states and institutions. Benjaminsen (2009: 168) speculates that this is because the message that the Environmental Security School delivers is simple compared to the one from the Political Ecology School, and it is easier for politicians to ignore.

In conclusion, the Environmental Security School's arguments are scientifically questionable, whereas the Political Ecology School's arguments are scientifically valid. Nevertheless the message from the Political Ecology School is ignored in international environmental politics, which is dominated by the message from the Environmental Security School.

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