The Politics of Climate Change Adaptation:
An Integrative Approach of Development and Climate Change Interventions in Nepal and Mongolia

1. Relevance to the call

The proposed project is relevant to the research programme NORGLOBAL (sub-programme GLOBMEK) on two accounts. First, the research can contribute to strengthening Norwegian research on and for development in the South by generating new (and in our opinion increasingly important knowledge) in the field of development science and policy as well as strengthening Norwegian institutional collaboration and capacity in climate and development. Second, our local cooperation and dissemination plan (in Nepal and Mongolia) will strengthen research capacity in the South and by communicating with local policy makers and development agencies we hope to contribute to better informed climate change adaptation policies and development interventions. It contributes to Norway's ability to implement the Norwegian Action plan for Environment in Development Cooperation with regards to the effects of climate change, and specifically addresses the theme of the recent parliamentary White paper (no. 13) on Climate, Conflict and Capital.

2. Introduction

The proposed project, led by the Department of International Environment and Development Studies (Noragric) at the Norwegian University of Life Sciences, represents an interdisciplinary social science analysis of the mechanisms by which development policies and interventions influence people's ability to adapt sustainably to climate change. Based on empirical evidence from two cases (farmers in Nepal and pastoralists in Mongolia), this research will provide a theoretically relevant framework for understanding the synergies between development and climate change.

Climate change as a global phenomenon will increasingly need adaptation measures in order to reduce the negative impacts of such changes and ensure livelihood security and sustainable development (Adger et al., 2009). Indeed, because efforts to tackle the causes of climate change (mitigation) have been slow and cumbersome, and the threat of climate change increasingly severe, adaptation is quickly gaining importance. The recent surge in the number of people in extreme poverty and those suffering from hunger (by 200 million and 100 million respectively) following food and financial crises of the last three years (Hulme and Scott, 2010) provides an added urgency to this awareness. This situation has prompted increased advocacy to approach climate change adaptation and poverty alleviation as two facets of a concerted development strategy (Solheim, 2010, Eriksen et al., 2007, Schipper, 2007). Yet, there is little integration between national adaptation programmes of action (NAPAs) aimed at reducing the impacts of climate change, and the national development strategies, especially those concerned with poverty reduction (Prowse et al., 2009, Hedger et al., 2008, McGray et al., 2007).

Moreover, attention to adaptation as a social process, that is adaptation as being dynamic and as prone to the influence of different and often opposing values, priorities, and power regimes, is also limited (Agrawal and Perrin, 2009, O'Brien, 2009). This fragmentation may reduce the sustainability of both development strategies and adaptation plans. Such a fragmented approach may in fact promote measures that are harmful to the people they are intended to help (Eriksen et al., Submitted). Our project focuses on adaptation as a political process of negotiation between actors (people, institutions, organisations) with different priorities and goals. Understanding adaptation as a political process will in our view help design more robust development initiatives that include climate change adaptation. The proposed project will therefore develop an integrative framework for critically assessing the impact of climate change adaptations measures on sustainable development and vice versa. We intend to present

our findings to and engage communication with major development institutions in Norway in order to raise awareness of the way such interactions can influence the effectiveness of development aid.

3. Research objectives and questions

The r**esearch goal is** to understand the mechanisms by which development policies and interventions influence people's ability to adapt sustainably to climate change. This is addressed through **three research objectives:**

1. Illustrate how climate change adaptation is included in political discourses, processes and relations, and how this in turn determines vulnerability patterns, actual adaptation options, as well as challenges for how poor people respond to climate change
2. Theorise and develop a framework for understanding the mechanisms by which political interests related to adaptation influence the potential and constraints for sustainable adaptation.
3. Identify options for how needs of the poor can more effectively be integrated in adaptation policy processes in order to support development efforts by Norwegian aid as well as Nepalese and Mongolian authorities.

In order to achieve these objectives, the project investigates in a comparative perspective the Nepalese farmers and Mongolian pastoralists, by focusing on three **research questions**:

1. How can aid and climate change interventions aimed at reducing vulnerability affect dependency relations and hence exacerbate vulnerability?

2. How are people's resource rights, local level adaptation strategies, and local power relations affected by policy prioritization regarding development and climate change?

3. How do particular livelihood, value and cultural systems manage to negotiate a space in interaction with commercial and political/government actors?

4. Background and status of knowledge

Efforts to address both sustainable development issues (e.g. poverty reduction, social equity and environmental integrity) and climate change adaptation in an integrated way have been conceptualized by Eriksen et al. (2007), Eriksen and O'Brien (2007) and Eriksen et al. (Submitted) as *sustainable adaptation* to climate change. The present project follows this approach by investigating the three facets of sustainable adaptation: 1) climate risk to people's livelihoods, 2) causes of people's vulnerability and 3) circumstance affecting adaptive capacity. The project focuses on the role of the nexus of political change, negotiation and power relations as fundamental elements framing people's ability to adapt to climatic changes and lead fulfilling lives.

Case study 1: Politics of food security in Nepal

This component will investigate how food security is integrated into national development policy and whether repeated food and seed distribution strengthens rural people's food security and their capacity to adapt to climate variability and change in a region in North West Nepal. Despite decades of humanitarian efforts, food insecurity prevails in many regions of the world (FAO, 2009) and is expected to further deteriorate due to climate change (IPCC, 2007). In Nepal 48 percent of children below 5 years are chronically malnourished (WFP, 2009) despite food and seed aid having been distributed annually, in some areas, like our study site, for more than three decades. Last year alone, the World Food Programme (WFP) has distributed food to about 3.5 million people (WFP, 2010).

Our analysis will start by charting local people's perceptions and goals of food security and climate change, the strategies envisioned to achieve these goals, and the environmental, social, and institutional circumstances that affect the effective deployment of the strategies. Secondly, it will analyse the

policies that significantly influence national food security strategies (e.g. food and seed distribution, land tenure arrangements) and how these policies interact with present and potential climate change adaptations. Finally, the research will investigate local people's visions and actions aimed at adapting to climate change and food insecurity. The analysis will be structured by the three facets of the sustainable adaptation framework.

Climate risk: Nepal is highly vulnerable to climate change (Chhetri and Pandey, 2009), as it is likely to experience a much higher rate of warming due to high altitudes (IPCC, 2001). Expected impacts of global warming in the region include faster melting of the Himalayan snow and ice cap, increased flooding, droughts as well as more unpredictable precipitation patterns (ICIMOD, 2008). The recent warming is already manifested in significant glacier melting (Bajracharya et al., 2007, UNEP, 2002, Ren et al., 2006). In addition, precipitations are becoming unpredictable and more erratic, with more droughts, and shorter periods of heavy rainfall (Shrestha et al., 2000, Rai and Gurung, 2005) exposing some regions to important risks of flooding and landslides (ICIMOD, 2010).

These changes are already impacting on agricultural production, reducing local and regional food security in Nepal (Adhikari, 2008, Gurung and Bhandari, 2008). Climate change and variability have stronger impacts on subsistent farmers reliant on rain-fed agriculture, but agriculture based on irrigation from glacier melt is also vulnerable in the long run (Aase et al., 2009). The lack of rain in 2009 has reduced the summer crop production by up to 30-50% in the hills and mountains (WFP, 2010). Many farmers confirm changes in climate and report that recent increase in climate variability and unpredictability makes the farming calendar difficult to plan (Aase et al., 2009). We will investigate differences in how these changes are perceived between farmers and policy makers.

Vulnerability: In addition to climate change, agriculture and other livelihoods are affected by other economic and political circumstances. Much of Nepal's countryside is physically marginalised due to difficult roads and limited access to markets. Agricultural land requires fertilization, usually provided by livestock manure. In some areas, up to 71 % of agricultural fields are not cultivated (Ghimire and Aase, 2007) mostly due to labour migration (Vetaas, 2007). Absentee land owners and local residents have stopped leasing land following the Land Reform Act of 1997 which has granted sharecroppers the right to claim ownership to the land they have leased (Aase et al., 2009). Selling of unused land is further inhibited in some areas by customary law (*parampara*) which prohibits the sale of land to non-residents of the village (Ghimire and Aase, 2007). Caste and gender based marginalisation and exclusion from resources, such as the very limited access to land by low castes are also important.

While these circumstances have exacerbated the vulnerability of agricultural livelihoods, the root causes of these developments have not been systematically investigated, especially not in connection to the national development plans. Our project will address this gap by investigating the causal mechanisms that produce food insecurity, especially interacting factors that may act as multiple and reinforcing causes of food insecurity locally, and how these are represented or ignored in policy.

Adaptive capacity: Several important adaptations of the agricultural sector have been documented in the region. The crop varieties (millet, wheat, barley and buckwheat are the main staple crops) planted are well suited to the challenging environment and local farmers have taken advantage of the recent climate changes. Ulsrud and colleagues (2008) have highlighted the importance of community seed banks and local plant breeding in Nepal as important assets in climate change adaptation, as they reduce dependence on government-supplied seeds of improved, exotic crops which require high amounts of fertilisers and pesticides (ibid).

The focus of our investigation in Nepal is the role of food and seed aid play in reducing vulnerability (in the form of food insecurity) and strengthening adaptive capacity of farmers in north-western Nepal, or conversely in increasing farmer dependency by altering power relations and reducing the space for negotiating measures and development approaches that address the key causes of vulnerability identified by farmers.

Case study 2: The influence of development interventions on Mongolian pastoralists' adaptive capacity

This component investigates how pervasive processes of globalization influence the adaptive strategies available to Mongolian pastoralists (herders) in the face of climate change. Mongolian pastoralism is a livelihood system based on the use of five livestock species (camels, horses, cattle, sheep and goats) in order to exploit highly variable seasonal pastures by frequent and long-ranging movements of animals and households. This investigation will build on herders perceptions of which climate changes have the greatest impact on their livelihoods. It will continue by investigating which social, economic and political circumstances shape the budget of opportunities and constraints herders have in order to cope with and adapt to identified changes. Special attention will be paid to how globalizations (political, economic and cultural) shapes political discourses, governance models, and power relations which turn influence adaptation and differentiate between herders with regard to their adaptive capacity.

Climate risk: Mongolia's climate is changing rapidly. The period 1980-1999 has been the warmest of the last millennium (D'Arrigo et al., 2001), precipitation regimes are also changing although it is not clear in which direction (IPCC, 2007b, Sato et al., 2007), and changes appear, like in Nepal, to be very localised (AIACC, 2006). In addition to average changes, variability has increased drastically and climate extremes are longer lasting and more frequent (Marin, 2010b). Moreover, there are more subtle changes, especially of the precipitation regime, that herders identify as especially challenging: the rainy season (controlling the plant growth season) has shortened and rains have become more intense. More importantly, pastoralists observe that rains have become more localized, patchy, an unusual phenomenon they identify as '*silk embroidery rain*' (ibid) forcing herders to move more frequently and farther in search of good pastures. During the last ten years, a series of droughts followed by extreme winters (*dzuds*) have lead to the death of 12 million livestock and the impoverishment of tens of thousands of families in 1999-2002. At present, the largest *dzud* of the past sixty years has killed 7.5 million livestock in just 4 months (January-April 2010) (Sumyiabazar, 2010).

The present study will build on previous investigations by project participants regarding climate change and its impacts in southern Mongolia in 2006-2007 (Marin 2010b) to examine the effect of successive climate extremes and how they are perceived by herders and policy makers.

Vulnerability: The significant losses of the last years are also connected to encompassing economic and political reforms that have since 1990 marked the transition from command-economy and communism to market-economy and parliamentary democracy. The reform of the state, hinged on neoliberal principles of budget discipline, trade liberalisation and privatization has been advocated by international development aid and financial organisations (e.g. the International Monetary Fund, the Asian Development Bank). This has resulted in a 'privatisation of risk' in which herders are left to fend for themselves by largely removing state provision of important services such as wells maintenance, and subsidised transportation (Marin, 2008, Marin, 2010a). Market liberalisation following Mongolia's ascension to the World Trade Organisation in 1997 has also resulted in herders becoming vulnerable to fluctuations in the global cashmere market, largely controlled by China (ibid). With regard to pastoralism, the neoliberal discourse has taken the stance of modernisation arguing that in order to

avoid the 'vagaries of climate' herders have to become modern, sedentary ranchers, relying on modern technologies (Marin, 2008). This has the potential to significantly exacerbate vulnerability in an increasingly unpredictable and variable environment. Moreover, the neoliberal take on development has also proposed pastureland privatisation, which has been fiercely opposed by herders (Marin, 2008, Sneath, 2003) but remains a contentious issue, with important advocates among policy makers and development institutions.

Land privatisation has the potential to severely increase herders' vulnerability by constraining mobility and increasing degradation, as it has happened in Inner Mongolia (Christensen et al., 2004, Xie and Li, 2008). The project will thus investigate the land tenure reform and the implementation of the modernisation discourse of development as potential sources of vulnerability, and the extent to which these sources of vulnerability are considered in climate change policy discourse.

Adaptive capacity: Mongolian pastoralists see increased mobility as their main adaptation option (Marin, 2008, Marin, forthcoming-b). Yet, in response to recent calamities the state has argued for the local production and distribution of hay as a long-term adaptation measure. Indeed, this year's winter disaster has been blamed by public and political voices on the herders' failure to prepare enough hay for the winter. This situation, similar to Nepal's food and seed distribution, has the potential to create negative resiliences or dependencies on the part of the herders, who are forced to enter winter with weak animals and rely on government hay aid. Another adaptation proposed by policy makers and supported by academics and NGOs is the formation of herder-groups as owners of pasture plots. Herder-groups, it is argued, will ensure the conservation of natural resources and sustainable benefit from resources (Bedunah and Schmidt, 2004).

Our previous investigation of herder-groups suggests they may replicate the discourse of the donors in order to attract financial benefits (Marin, forthcoming-a), implying that local people are not simply passive recipients of development interventions but that they may be able to engage discourses in order to further their interests. The proposed project will investigate pastoralists' adaptive capacity along two coordinates. On the one hand we will try to assess the sustainability of hay reserves vs. mobility, on the other hand we will investigate the potential for herder groups resource management as a sustainable adaptation. These adaptation options will be regarded through the lens of power relations and politics with a focus on how climate change adaptation options are argued for by different actors (herders, bureaucrats, NGOs, academia, policy makers), discourses and power regimes. This is a perspective which is largely missing in the development literature in general and especially in respect to climate change adaptation.

5. Theoretical approaches and methodological choices

The research problem to be investigated by both case studies is how development interventions and planned adaptations can become effective and sustainable. The increasing funding flows for adaptation (e.g. the Kyoto Protocol Adaptation Fund) and the urgency provided by climate-related disasters make the problem increasingly pressing for ensuring development interventions and adaptation measures do not in fact reduce adaptive capacity.

Our study relies on the interdisciplinary integration of two strands of literature: adaptation/vulnerability studies and development studies. This is a novel approach with significant potential, seldom exploited. Adaptation is seen as adjustments in practices, processes, and structures to address climate change and its impacts (IPCC, 2007). Vulnerability is understood as the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change (ibid). While adaptation is currently receiving

increased attention, the focus is still on physical and technical adjustments (e.g. flood defenses, irrigation schemes, provision of drought resistant seeds) (Vincent 2007). Moreover, there has been a tendency to assume people will adopt adaptations automatically once these are available, a proposition increasingly challenged (Burton et al., 2002). Our approach is therefore that the adoption of adaptation options is influenced by political processes of struggle and negotiation between different actors and interests. Moreover, there is very little investigation into the inherent assumption that all adaptations are useful. Although there is growing evidence that some measures envisioned as adaptation may be ineffective or indeed detrimental (maladaptations) to people's ability to address climate changes and impacts thereof (Adger and Barnett, 2009, Barnett and O'Neill, 2010). There is also increasingly evident that some interventions intended as adaptations may in fact reduce people's adaptive capacity (Bingeman et al., 2004, Gallopin, 2006, Ostrom, 2007). Repeated food and seed aid may be such an intervention as it is often criticised for creating dependency which may impact negatively on local capacity to cope with stress (Adhikari, 2008, Shledon, 2005, Sperling et al., 2008, Sperling, 2008) and adapt to climate variability and change (Eriksen et al., 2007). The mechanism proposed is that food aid impacts negatively on local markets and reduces people's incentive to produce food, in turn leading to increase dependency on food aid. Our study will try to elucidate whether such a mechanism is in place in our study area and which power relations, political decisions and institutional dimensions that may be perpetuating it.

The second relevant theoretical input comes from the literature on development studies. The recent insights from development theory suggest that in order to move beyond the theoretical impasse between modernisation and dependency models of development, more fruitful engagements with promoting developments should focus on developments in the plural. Such a perspective acknowledges the importance of including culture (life-worlds, rationalities, goals), power and politics into explanations of what motivates people (Tucker, 1999, Schuurman, 1996). These approaches argue development should be understood as people's capacity to live fulfilling lives (Sen, 1999) however these are defined. This is a valuable insight into how and why not all adaptation measures are adopted when available and that indeed power struggles and the associated political negotiations hold more explanatory power as to what adaptation designs and development interventions may become effective and sustainable.

Despite some documentation of adaptation to climate change being a profoundly political process (Eriksen and Lind, 2009) characterized by uneven social and political relations and continuous negotiations between different interests, the political dimensions are often ignored both in research and adaptation policies. This research project aims to address this research gap by identifying some of the key political processes and relations through which different actors and interests interact in the adaptation process.

Methodologically, the overarching questions are addressed through a comparative case study of the politics of food security in Nepal and the influence of globalization on Mongolian pastoralists' adaptive capacity. Our choice for a comparative study is motivated by our interest in advancing the theoretical reaches of the field by proposing a mechanism explaining how political processes may influence adaptation. Adaptation in socio-ecological systems is a complex phenomenon, ill treated by general policy recommendations, or panaceas (Ostrom, 2007). Yet, in order to provide relevant advice to policy makers, there is also a need for certain generalisation across cases in order to understand 'tell-tale' signs of misfit or damaging development interventions. We believe that a valuable balance between generalisation and relevance can be achieved and adaptation theory can become more reliable in addition to it being 'operational', if we manage to uncover mechanisms as 'intermediate between laws

and description' (Elster, 1998). Our study will provide such a mechanism by integrating the two cases, which are similar on many accounts (e.g. ecological and economic marginalization of farmers and pastoralists, encompassing institutional reforms) but also different enough to allow insight into the importance of bargaining power, development discourses, etc.
Data will be collected via several qualitative methods relevant to all three research questions.

Research question 1: How can aid and climate change interventions aimed at reducing vulnerability affect dependency relations and hence exacerbate vulnerability?
In order to uncover potential dependency relations we will compare food production and consumption patterns in Nepal, and hay usage and mobility patterns in Mongolia. Data will be collected from local distribution logs and statistics, interviews with key informants and stratified random samples of households (minimum 50 interviews in each site in order to uncover possible differences between groups- wealth groups, castes, etc.). Triangulation of the sources of information and participation of various groups is particularly important. A questionnaire-based survey may be administered in addition to check for the spread of views and strategies across a significant sample.
Research question 2: How are people's resource rights, local level adaptation strategies, and local power relations affected by policy prioritization regarding development and climate change?
We will perform semi-structured interviews and group discussions focusing on resource rights, adaptation options and strategies and the power relations that affect such strategies. We expect power relations and differences in bargaining power to translate into differences in adaptive capacity. Different power budgets may also play a role in decision making at the household level (e.g. for land rights, priorities for different adaptive strategies). In addition women may have more of their time tied to tasks such as child raising, schooling, domestic chores, potentially leading to other choices and adaptation priorities than for men. When looking at local discourses of adaptation/development and which interests become hegemonic, it is also important therefore to include a gender-informed vantage point. We will also consider how larger scale social and political processes such as globalisation and development strategies may significantly alter these gender relations.
In the case of the PhD research, longer fieldwork presence will allow for participant observations to check for the actual manifestations of the emic views of adaptation and power relations. In the case of Mongolia (PostDoc research) research will be conducted in the previous site of long-term participant observation research, providing the needed local legitimacy that would allow the collection of participant observation data even in a shorter period. A large and diverse enough stratified sample should again be investigated to ensure the participation of dissident and marginalised voices (often most vulnerable), entailing minimum 30 interviews and 10 group discussions in each site.
Research question 3: *How do particular livelihood, value and cultural systems manage to negotiate a space in interaction with commercial and political/government actors?*
Semi-structured interviews with relevant political and government actors (land officers, district governors), development workers, and interviews with a stratified random sample of households, and possibly a group discussion with the three groups of stakeholders (possibly also including development workers) may provide valuable insights into the questions. The stratification will consider differences in terms of wealth and gender, given that the two aspects are relevant to understanding adaptation options for the poor and marginalised, which are usually the most vulnerable categories (Demetriades and Esplen 2008). Semi-structured and unstructured interviews are appropriate given the potential sensitive, conflictual nature of the topic. Policy documents, grey literature and local and national statistical records will complete the data for all questions.

6. Project partners and collaborators

Our partners in the south are Kathmandu University and ICIMOD (international Centre for Integrated Mountain Development) in Nepal and the National Academy of Sciences in Mongolia. In Nepal,field work is also coordinated through the Development Fund and its local partners in the study area, the Nepal Institute of Development Studies and Local Initiatives for Biodiversity, Research and Development. The project will collaborate with other Norwegian and international research institutions through networks such as that of the University of Oslo (Department of Sociology and Human Geography) led international Global Environmental Change and Human Security Project to which two of the project members are associated. The project will specifically contribute to, and gain from, the building up of a Noragric-led Norwegian Climate and Development Consortium currently being initiated that includes both research and practitioner institutions. The project forms part of the emerging research group on Climate and Development at the Department of International Environment and Development Studies (Noragric), UMB. It will hence strengthen Norwegian institutions' ability more widely to take global perspectives in environmental, energy and climate research.

7. Dissemination and networking

We will disseminate our findings in the forms of peer-reviewed articles, an authored book, conference participation, workshops with relevant stakeholders in Nepal and Mongolia and a synthesis conference in Norway (possibly to be summarised in a special issue of the journal Climate and Development). See application form for details. Importantly, the results of the project will inform Chapter 13 (Poverty and livelihoods) of the upcoming IPCC fifth assessment report Working Groups 2 (Impacts, vulnerability and adaptations) due in 2014, of which the project manager has been appointed as a lead author.

8. Budget

The project applies for the financing of the final 2.5 years of a 75% PhD position (PhD carried out over four years from August 2009 to June 2013), a 2 year full time postdoc position (including overseas stipends) and a partial position for the Project manager. The time span of the project will be from 1 January 2011 to 30 June 2013 (2.5 years). See application form for a detailed activity plan.

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