Transiting to Green Growth: Natural Resources in Nepal – Project description

1. Scientific summary

Trade has the potential to drive the transition to a green economy by promoting sustainable resource use, generating inclusive employment, and contributing to poverty alleviation. However, lack of empirically-based knowledge renders this transition difficult. This research project will investigate how the transition to green growth can be undertaken in the medicinal and aromatic plant (MAP) sector in Nepal. The sector involves millions of people and has potential to promote pro-poor employment and earnings as well as sustainable resource use. The project focuses on (i) identifying, describing and quantifying transnational production networks for MAPs traded in and from Nepal to India and China, and (ii) socially equitable employment potential by identifying points of intervention that enhance inclusive job creation, increase earnings and their redistribution, and promote sustainable resource use. Data is generated through transnational production network actor interviews, from harvesters through traders to end consumers and regulatory bodies, and ecological inventories. The project is developed and managed by the University of Copenhagen, the Federation of Community Forestry Users in Nepal, Tribhuvan University and the Agriculture and Forestry University in Nepal, and the Chinese Academy of Sciences. Project outcomes will inform the development of policies and strategies for transiting to green growth in natural resource sectors in low income countries. Outputs include international peer-reviewed papers, policy briefs, strengthening Nepalese partners' human and social capital, and sector-wide stakeholder participation.

2. Objectives of the project

Poverty reduction remains a global challenge. Recent progress in many developing countries is challenged by rising inequality, lack of economic growth that leads to jobs for the poor, and threats to scarce natural capital. Sustainable and inclusive economic growth and development in developing countries can be pursued through a transition to a green economy. This transition, however, is rendered difficult by lack of knowledge (Hallegatte et al. 2011; OECD 2012), e.g. how can green growth increase earnings while achieving sustainable management of natural resources? This lack of knowledge leads directly to lack of evidence-based policies to promote green growth.

Trade can drive the transition to a green economy by promoting sustainable resource use, generating employment, and contributing to poverty alleviation (UNEP 2011). The general objective of this research-cum-capacity building project is to *investigate how the transition to green growth based on sustainable natural resource management can take place in a developing country*. This is empirically examined through analysis of the MAP trade originating in Nepal. This case is particularly relevant as: (i) MAPs constitute a major export item (Olsen 2005); (ii) the trade involves millions of low income small-scale harvesters, many of which are women, thousands of traders and hundreds of industries (Olsen and Bhattarai 2005), (iii) the demand is fuelled by the expanding middle classes in China and India (Goldstein et al. 2006, Kaplinsky et al. 2011), (iv) it provides an example of how low income harvesters can benefit from greater regional integration between developing countries. There is ample scope for transiting to green growth in the sector, e.g. overharvesting of species is common, producers receive low prices (e.g. as standards in end markets are not known to producers), and the institutional framework is weak (e.g. resulting in rent-seeking) (Jenisch and Probst 2011, Olsen 2005, Olsen and Bhattarai 2005). Major MAP – green growth linkages are: (i) avoiding costly environmental degradation can lead to a more efficient and productive economy (Hallegatte et al. 2011), e.g. higher long-term production of medicinal plants; (ii) correcting market failures, such as the central wholesaler oligopsony dominating Nepal to India MAP

exports (Olsen and Helles 1997), could have green growth co-benefits such as positive pro-poor income effects at the levels of producers and lower-level suppliers; (iii) getting the policy mix right could increase pro-poor incomes and growth, e.g. handing over use and management rights to high altitude medicinal plant production areas to local communities or setting royalty rates in relation to market prices; (iv) inclusive growth promotion, e.g. through horizontal co-ordination, such as local trader associations, and (v) product up-grading based on understanding demand determinants, e.g. villagers producing cinnamomum leaves are unaware that they are traded in four different qualities.

Existing studies on MAP trade suffer from old empirical data and a narrow focus on traded volumes and prices from producers to wholesalers. Recent advances in transnational production network theory and allied fields, including integration of poverty and environmental concerns into value chain analysis (Mitchell and Coles 2011), allow more comprehensive investigations. We use the term "transnational", rather than the more common "global", to emphasize our focus on the regional south-south trade: more than 90% of the annual harvest in Nepal ends up in India and China (Olsen 2005). To generate knowledge to support the transit to green growth in the commercial MAP sector in Nepal, the project has the specific objectives:

1. To provide improved understanding of the dynamics of transnational production networks for MAPs traded in and from Nepal
   a. Identify, describe and quantify MAP transnational production networks from Nepal to India and China, vertically and horizontally
   b. Assess the sustainability of harvest of valuable commercial MAP species
   c. Determine the factors influencing MAP demand in final consumption countries (Nepal, India, China)
   d. Analyse the institutional context of the transnational production networks, with focus on Nepal
   e. Assess the impact of transnational production network dynamics on rural household incomes in marginalized producer communities in Nepal
2. Build human and social capacity to undertake high quality green growth related research and dissemination at key natural resources institutions in Nepal
   a. Strengthen human and social capital at Nepalese partners
   b. Establish a Nepalese forum for discussing and identifying feasible points of intervention across MAP related actors and sectors

Project hypotheses are:

1. The livelihoods of the rural poor, including vulnerable groups such as women, can be improved in natural resource-based transnational production networks when transiting to green growth. This is possible through value creation, enhancement and capture processes; and enhanced relational proximity and improved institutional context.
2. Low cost transition pathways to green growth in the MAP sector in Nepal can be identified.

The project requires an interdisciplinary approach (following from specific objectives 1a-1e and reflected in the composition of project partners). Specifically, project design is structured around the application of (i) Transnational Production Network (TPN) theory and tools, (ii) recent advances in Population Ecology, (iii) Political Ecology (PE) and Science and Technology Studies (STS) theory, and (iv) Rural Livelihoods theory. Theory and tools from population ecology and rural livelihoods are relatively straight forward to apply to the present project: the former through establishment and monitoring of plots (Life Table Response Experiments

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(Caswell 2001)) and the latter by applying recently developed total household income survey techniques that include environmental incomes (Angelsen et al. 2011). This, however, is not the case for TPN, PE and STS. These are hence explained in more detail in the following.

A transnational production network is the transnationally organised nexus of interconnected functions and transactions by firms and non-firm institutions through which a specific product is produced, distributed and consumed (Henderson et al. 2002, Coe et al. 2004). The TPN framework is conceptually rich but empirically not adequately developed (Bridge 2008, Coe et al. 2008). This project contributes to the development of the analytical approach by applying it to a study of the Himalayan TPNs for MAPs by multi-national research teams with both quantitative and qualitative skills. This will provide focus on (i) explicit products and actors (using a terminology suggested by Olsen and Bhattarai 2005) and incorporation of recent methodological advances from integrating poverty and environmental issues into value chain analysis (Mitchell and Coles 2011); (ii) southern actors and agencies which will allow a better understanding of the opportunities and challenges for a developing country economy to benefit from a regional development strategy (Murphy and Schindler 2011); (iii) green growth that emphasises the identification of sustainable pro-poor employment, business competitiveness, and institutional frameworks. In our empirically grounded reframing of TPN we focus on activities from harvesting to consumption. We expect to find diverse and discontinuous types of transnational production networks, which is likely to have a set of varied impacts on employment and equity and hence lead to distinct policy recommendations. The aim is to operationalize the four key theoretical dimensions of TPN: relational proximity, value, power and embeddedness. Relational proximity describes how two actors mutually align their interests (e.g. fictive kinship (*miteri*) between harvesters and traders from different castes in Nepal); value creation refers to the firm-level labour process and the possibilities for generating rent (e.g. an essential oil distillation unit may generate technological rent through its access to a community-managed medicinal plant resource); value enhancement refers to the circumstances under which value is enhanced (e.g. the distillation unit may increase unit value through new technology); and value capture to the localized benefits from value creation and enhancement (e.g. through reinvestments, spin-offs or the ability of local government to tax the distillation unit). Power, who holds it and how it is exercised, is explicitly investigated through an examination of corporate power (exercised by firms), institutional power (wielded by governments and agencies), and collective power (as expressed through actions by agents such as NGOs and trade unions). Embeddedness refers to the social and institutional factors tying a firm to a particular physical location, and the formal and informal relations tying it to a particular network position.

Institutional context analysis remains the most challenging to incorporate in TPN research (Coe 2011). To operationalize such research, we will here build on recent advances in PE and STS. The former has been successfully used to identify and explain dominant environmental narratives (Forsyth 2003), i.e. it enables us to move beyond just describing the institutional context (e.g. legislation and institutions) to explaining why a particular enabling environment is found in a particular location. The focus in STS has been on processes related to how, why and where knowledge claims are produced and circulated (Goldman and Turner 2011), i.e. it enables us to look at and understand the processes leading to the establishment of a particular enabling environment. Here we thus use concepts from STS to understand the processes leading to the narratives, e.g. boundary organizations and objects, black-boxing and epistemic communities. This approach will enhance identification of feasible pathways when developing recommendations for transiting to green growth. The combination with TPN will also serve to operationalize PE and STS in relation to natural resources in developing countries, e.g. Rocheleau (2011) has noted that place and territory are not well developed in PE and STS.

We thus strive to operationalize and integrate a number of tools originating from quite distinct fields, as illustrated in Figure 1. Built up around a generalized single strand flow of commercial medicinal plants, it shows the main actors involved, main topics addressed, and how these will be taken up in the project. Actor and network terminology is derived from Olsen and Bhattarai (2005) while topics and work packages text is from the present proposal. The nodes, points in the network where products are exchanged and often transformed (processed), at the centre of each circle in the network flow denotes the main actors in each link while the surrounding circle, inspired by Bolwig et al. (2010), represents horizontal elements, e.g. the environmental resource base at production sites, or gender issues in central markets. The linkages (arrows) between nodes denote flows, with products flowing downstream towards consumption and finance and information flowing upstream towards production. Some actors, topics and work packages are particularly relevant for single nodes, e.g. harvesters are found at production sites which are also the target of the resource base work package, while others cut across several nodes and segments (the vertical parts between nodes), e.g. the topic of power. The framework thus differentiates between different scales of analysis, e.g. environmental production issues are analysed locally through assessment of the sustainability of production and regionally through determining demand drivers.
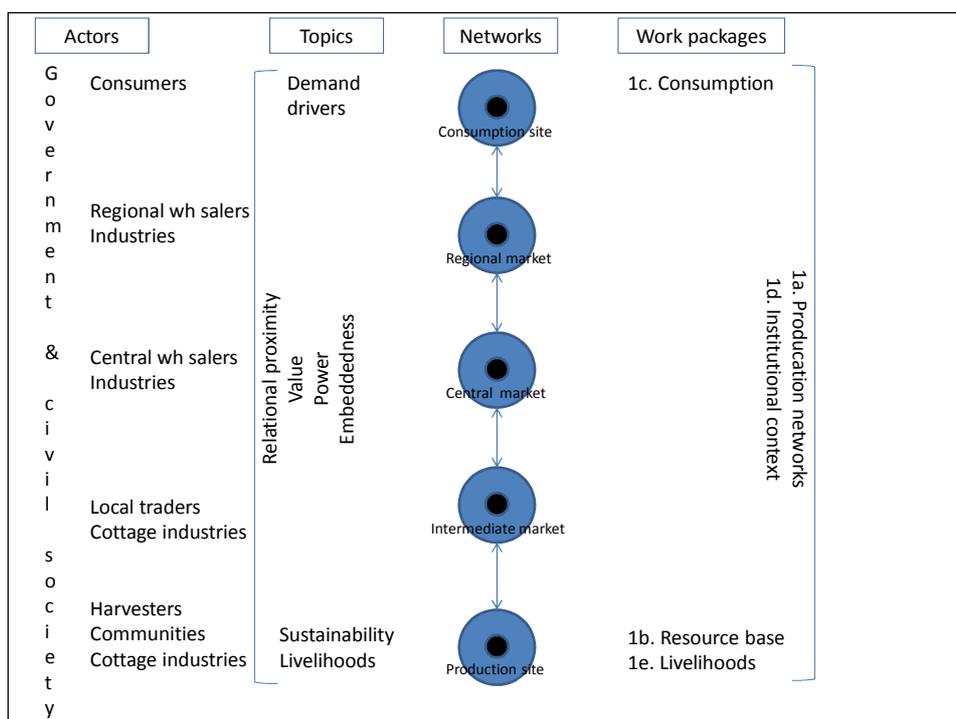

Fig. 1 Conceptual framework for analysing the transnational production network for Nepalese medicinal plants.

3. The main results of the project

In a context of lack of basic infrastructural, institutional, technological and financial capacities for integration into the global economy, the project will analyse a natural resource based example of how a developing country economy may benefit from growing regional south-south trade fuelled by demand in BRIC countries. The interdisciplinary approach will allow an understanding of MAP utilization from production to consumption, facilitating the identification of realistic interventions. The research results will allow an estimate of equity and pro-poor employment outcomes when transiting to a green economy vs. operating as presently. These

outcomes will be investigated throughout the networks, e.g. (i) the work in marginalized producer communities will allow estimation of gender impacts of increased value enhancement derived MAP incomes, and (ii) value creation and enhancement analysis (drawing on the production network, consumer and institutional context work packages) will allow estimation of potential employment opportunities from organic and/or certified MAP production. Findings will allow (i) development of generic recommendations on how to approach and plan the transition to green growth in a natural resources sector at national level, and (ii) identification and dissemination of points of intervention with emphasis on structural transformation of the MAP sector, in particular in relation to reducing poverty, enhancing inclusive job creation and promoting sustainable environmental resource use. In addition, in relation to theory, the research will contribute to move TPN into the empirical sphere and show how TPN can be operationalized by integrating tools and theory from relevant fields such as population ecology and political ecology.

In terms of capacity strengthening, the main results will be (i) establishment of a Nepalese resource base with hands-on research experience of natural resource based sector transit to green growth, and (ii) integration of research from project start into sector-wide stakeholder dialogue to facilitate identification of feasible points of intervention and dissemination.

4. Project's methodology

Following the specific objectives, a range of methods will be applied. They are here described using the same numbering as for the specific objectives:

1a. Identify, describe and quantify MAP transnational production networks. Data collection will include both vertical (e.g. quantification of volume and registration of prices of major species traded at different nodes in the networks) and horizontal (e.g. how and why producers organize and with what outcomes) elements. Specifically: (i) Bhattarai and Olsen (2000) stratified Nepal into fifteen cells and chose a district in each cell. We will work with the same 15 districts which will allow analysis of trade dynamics by comparing with previous results (Olsen and Bhattarai 2005, Olsen 2005). Interviews using face-to-face standardised open-ended questionnaires will include harvesters (n~1000), local medicinal plant traders (n~200), and cottage industries (n~20); (ii) all central wholesalers (n~90) in Nepal will be identified (using the district surveys and through wholesaler associations) and interviewed using standardised open-ended questionnaires; (iii) all medicinal plant processing companies (n~20) will be interviewed using standardised open-ended questionnaires; and (iv) regional wholesalers and processing industries (identified through central wholesaler interviews) are interviewed in India and China (n~60 each). Data collection will include data to characterize actors and their behaviour as well as trade data; it will also determine main end products for Nepalese medicinal plants, that are today unknown, which will feed into the consumer survey (see below).

1b. Assess the sustainability of harvest of valuable commercial MAP species. Human and environmental impacts on populations of the economically most important traded herbal MAP species will be investigated from 2014 - 2017 with the use of matrix modelling across a continuum of biophysical and harvest rate parameters. The methodology is based on in depth understanding of the species' population ecology. This allows generation of sustainable harvest rates and techniques. Data will be analysed using Life Table Response Experiments (Caswell 2001) to estimate species specific sustainable harvest levels.

1c. Determine the factors influencing MAP demand in final consumption countries (Nepal, India, China). Determinants of medicinal plant usage will be investigated through structured surveys administered face-to-face with randomly selected consumers in two sites in Nepal

(urban and rural; each n~500) and in two urban sites in the dominant end markets in northern India and western China (each n~1000).

1d. Analyse the TPN institutional context in Nepal, i.e. how the framework conditions (focusing on legislation, policies and institutions) in Nepal are developed and changed. All national and sub-national actor groups involved in developing and implementing TPN MAP relevant nominal legislation and policies in Nepal will be identified; in each group actors (for a total n~40) will be interviewed using semi-structured interviews. Data collection and analysis will focus on how MAP knowledge is produced, circulated and applied in Nepal.

1e. Assess the impact of transnational production network dynamics on rural household incomes in marginalized producer communities. The above (1a-d) will be supplemented with two local scale case studies to generate richer household (each n ~ 100) level data illustrating the economic importance of medicinal plants in livelihood strategies. Case study area selection criteria: (i) high level of medicinal plant harvesting and use now and in the past, (ii) area influenced by recent changes in the networks, (iii) marginalised, e.g. low average annual per capita income. One case will focus on wild harvesting at high altitude, the other on cultivation at low altitude.

Methods for research capacity strengthening include graduating PhD students from Tribhuvan University and the Agriculture and Forestry University; training senior researchers in interdisciplinary research design and management; training junior researchers in data collection instrument design, testing and implementation; training researchers in academic and popular writing through co-authoring; promoting researchers' networks through participation in conferences; training researchers in collaborating with sector stakeholders through PAC (see below). Capacity building activities is supported by workshops and an international conference.

Research will at all times adhere to best standards as described in the Code of Ethics of the American Anthropological Association.

5. Relevance

The proposed research falls squarely within Theme 2 "Green economy, inclusive growth and employment": the focus is on generating knowledge that will enable transition to green growth in the MAP sector in Nepal. The proposed project is fully aligned with the development priorities of Nepal: the Government's Three Year Plan Approach Paper covering 2010-13 and the Trade Integration Strategy from 2010 emphasises the importance of inclusive growth through commercialization, production and processing of MAPs. The need to move towards industrialisation through domestic processing of sustainably managed MAP resources is identified in government policies, incl. the Herbs and Non-Timber Forest Products Development Policy 2004, Guidelines for NTFP Based Enterprises 2005, and the Tenth Plan (the Poverty Reduction Strategy). Recently, the Government of Nepal has directly expressed its interest in pursuing green growth (NPC 2011). The proposed project also fully supports institutional capacity building priorities at the two partner universities: Tribhuvan University's 20 Year Strategic Vision (more high quality research contributing to poverty alleviation) and strengthening the Dept. of Agricultural Economics at the Agriculture and Forestry University.

In relation to the new strategy for Denmark's development cooperation (MFA 2012), the project will directly contribute to the goals to: fight poverty and create sustainable development through green growth, increased earnings and more jobs; support green growth based on sustainable management and use of natural resources; enhance the competitiveness of businesses; contribute to strengthen national framework conditions for green growth; and promote dialogue between private sector, government and civil society.

6. Project plan

An overview of the work and time schedule is presented in Table 1, and associated milestones in Table 2. A Gantt chart is available upon request.

Table 1. Overview of work and time schedule

Activity	2014				2015				2016				2017				2018	
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
PhD recruitment	X	X	X															
PhD studies				X	X	X	X	X	X	X	X	X	X	X	X			
Draft, test and finalize data collection instruments	X	X	X															
Data collection																		
1a. Production networks					X	X	X											
1b. Resource base			X				X				X				X			
1c. Consumers						X	X											
1d. Institutional context					X	X												
1e. Livelihoods							X	X										
Data analysis										X	X	X						
Joint writing													X	X	X	X	X	X
Work shops		X							X									
Int. conference																	X	
JPSC meetings		X			X				X				X				X	
PAC meetings		X			X				X				X				X	

Table 2. Overview of milestones by year

Year	Milestones
2014	Project start-up workshop held; PhD students (4) recruited, enrolled and studies initiated; Data collection instruments drafted, tested and finalized; Joint data collection guidelines published; Annotated bibliography published; Data collection started for resource base component; Joint Project Steering Committee (JPSC), Project Management Committee (PMC) and Project Advisory Committee (PAC) constituted and first meetings held; PMC regulations adopted; First policy brief published; First internal and external newsletters circulated
2015	PhD student data collection finished; Data collection for production network, consumer, institutional context and livelihoods components finished; Second round of data collection for resource base component completed; One policy brief published
2016	PhD study stays in Denmark completed; Data review and analysis workshop held; Third round of data collection for resource base component completed; Joint data analysis in all components undertaken; One policy brief published; Two papers at international conferences presented
2017	Last round of data collection for resource base component completed; Joint writing on all components; PhD theses (4) submitted and defended; 8 papers submitted for international publication; Two policy briefs published; Three papers at international conferences presented
2018	Joint writing on components finalized; 8 papers submitted for international publication; International conference held and proceedings published; Two policy briefs published; Three papers at international conferences presented

7. Participants, organisation and management

Partners bring an essential set of complementary skills to the project, from both research and dissemination. Danish partners provide methodological leadership and are involved in design, supervision, technical back-stopping and field work. They have in-depth knowledge of transnational production network theory and tools, Himalayan MAP markets, PE and STS, and institutional analysis; IFRO leads the consumer surveys and institutional context investigation. IGN participates in the production network package. CDB has strong skills in medicinal plant resource inventories and is primary partner on the sustainable supply studies. FECOFUN brings in a nation-wide dissemination network (including ability to contact the 2.2 million households involved in community forestry, many of which also engage in medicinal plant production) as well as significant MAP trade and industry field work experiences and lead the trade studies in Nepal and India. DEA brings in experience with value chain investigations, marketing and agribusinesses and contribute to trade studies in Nepal and India. KIB has extensive experience with field work and MAPs in China and is primary partner for activities in China. All partners participate in data cleaning, storing, analysis and writing. The partners have in-depth theoretical knowledge, exceptionally strong field work experiences, and solid international interdisciplinary research and management experiences. Core team:

- IFRO: Prof. C. Smith-Hall specialising in MAP trade studies, livelihoods, PE and STS; Assoc. Prof. H.O. Larsen specialising in MAP production and institutional analysis; Assoc. Prof. H. Meilby specialising in inventories; and post-doc M. Pouliot specialising in MAP consumption patterns.
- IGN: Prof. N. Fold specialising in transnational production network theory and tools.
- FECOFUN: Head of Research Dr. N. Bhattarai is the national lead authority on MAP use and trade. Mr. B.P. Shrestha brings knowledge on dissemination and communication with end users.
- CDB: Assoc. Prof. S. Ghimire and Assoc. Prof. C.B. Baniya specialising in medicinal plant inventories and population dynamics.
- DEA: Prof. P. Regmi and Asst. Prof. S.C. Dhakal specialising in agricultural marketing and agribusinesses.
- KIB: Prof. J. Xu and Dr. J. He specialising in non-timber forest product trade studies, Dr. M. Yan with consumption surveys, and Dr. D. Schmidt-Vogt in inventories.

The Joint Project Steering Committee (JPSC), with one senior member from each participating institution as well as the Danish Embassy in Kathmandu, is chaired by the Principal Responsible Scientist (C. Smith-Hall) and will oversee the implementation of the project. The Project Management Committee (PMC), chaired by N. Bhattarai and with one active researcher from each participating institution, will be responsible for day-to-day project implementation. The PMC will work according to rules and procedures defined by the JPSC.

To enhance national anchorage, sector relevance and use of research outcomes, the project is advised by the Project Advisory Committee (PAC) made up of key medicinal plant stakeholder groups drawn from the private sector, government and civil society; a list is available upon request. The PAC will (i) ensure that the project is relevant to end users, (ii) provide an avenue for timely and appropriate dissemination of findings, and (iii) advice on project improvements. PAC is chaired by Nirmal Bhattarai, representing the project partners.

8. Project's international dimension

Besides creating an active regional (Nepal, India, China) consortium, project findings will be discussed at international conferences and in key medicinal plant focused international fora, notably the World Conservation Union's (IUCN) Medicinal Plant Specialist Group (Smith-Hall, Bhattarai, Larsen are members) and the International Union of Forestry Research Organization's (IUFRO) Medicinal Forest Product working party (chaired by Smith-Hall).

9. Expected outputs

C*apacity building* outputs include improved skills for research design, high quality data collection, advanced data analysis skills, and high quality writing skills. Longer-term effects on society and development will be (i) the establishment of a solid human knowledge base to be drawn upon to investigate and develop transnational production networks in the future, e.g. to assess sustainable harvest levels for new species, (ii) facilitation of the MAP sector's transit to green growth to the benefit of producers and the national economy, and (iii) improved science-development dialogue and collaboration through the PAC initiative. *Research* outputs include four PhD theses and 16 international peer-reviewed papers. *Dissemination* outputs include seven policy briefs; six popular science papers; four newspaper articles; participation in two radio programmes in Nepalese; continuous stakeholder dialogue and integration into policy processes from project start-up.

The project's focus on social equity in the MAP transnational production network will benefit Nepal's development through identification of points of intervention, e.g. where (i) human capital investment should be made to enhance inclusive employment opportunities; and (ii) legislation and policies can be changed to facilitate the transit. Moreover, the assessment of sustainability of MAP harvests will ensure that green growth is built on more efficient use of natural capital.

10. New knowledge

In terms of new knowledge, the project will generate the first-ever empirically-based set of coherent recommendations on how to transit to green growth in a natural resource sector in a developing country. Also noteworthy is the research project's emphasis on sector integration and dissemination, from project start using the PAC; this may be a model that can be reproduced in other research projects. Regarding position in relation to existing knowledge, see above literature review in the Objectives section.

11. Publication and dissemination strategy

Beyond pursuing standard scientific publications in international peer-reviewed journals, the project strongly emphasizes dissemination (see Table 2). This is reflected in partner composition, with FECOFUN having particularly strong dissemination experiences and networks, and project design: the PAC will serve to identify end user demands to research result formats, as well as discuss the feasibility of any public policy recommendations. By establishing stakeholder dialogue at the very beginning of the project, we strive to increase the timeliness, appropriateness, and accuracy (including content and language) of policy briefs and use of findings. The project will also circulate bi-annual internal and external newsletters.

12. Strategy for phasing out of the project

PhD students will be employed at the two Nepalese universities. Increasing the research skills of existing staff is expected to lead to new and additional external research funds (required to continue research at Nepalese partner institutions due to limited internal institutional funds). A PAC member institution will chair the committee in the project's last year and continue the forum.

13. Main references

Angelsen, A., Larsen, H.O., Lund, J.F., Smith-Hall, C. and Wunder, S. 2011. Measuring livelihoods and environmental dependence – methods for research and fieldwork. Earthscan, London, 263pp.

Bhattarai, N.K. and Olsen, C.S. 2000. Towards a generic framework for investigating national importance of medicinal plant trade. In Amatya, S.M. (Ed.) Community based NTFP management, South and East Asian Countries NTFP Network (SEANN) and Institute of Forestry, Pokhara, pp. 336-348.

Bolwig, S., Ponte, S., du Toit, A., Riisgaard, L. and Halberg, N. 2010. Integrating poverty and environmental concerns into value chain analysis: a conceptual framework. Development Policy Review 28: 173-194.

Bridge, G. 2008. Global production networks and the extractive sector: governing resource-based development. Journal of Economic Geography 8: 389-419.

Caswell, H. 2001. Matrix population models. Sinauer Associates, Sunderland, Massachusetts.

Coe, N.M. 2011. Geographies of production II: a global production network A-Z. Progress in Human Geography 36: 389-402.

Coe, N.M., Dicken, P. and Hess, M. 2008. Global production networks: realizing the potential. Journal of Economic Geography 8: 271-295.

Coe, N.M., Hess, M., Yeung, H. W-C., Dicken, P. and Henderson, J. 2004. 'Globalizing' regional development: a global production networks perspective. Transactions of the Institute of British Geographers 29: 468-484.

Forsyth, T. 2003. Critical political ecology: the politics of environmental science. Routledge, London.

Goldman, M.J. and Turner, M.D. 2011. Introduction. In Goldman, M.J., Nadasdy, P. and Turner, M.D. (eds) Knowing nature – conversations at the intersection of political ecology and science studies. The University of Chicago Press, London, pp. 1-23.

Goldstein, A., Pinaud, N., Reisen, H. and Chen, X. 2006. The rise of China and India: what's in it for Africa? The Development Centre, OECD, Paris.

Hallegatte, S., Heal, G., Fay, M. and Treguer, D. 2011. From growth to green growth – a framework. Policy Research Working Paper 5872, World Bank, Washington DC, 38pp.

Henderson, J., Dicken, P., Hess, M., Coe, N. and Yeung, H. W-C. 2002. Global production networks and the analysis of economic development. Review of International Political Economy 9(3): 436-464.

Jenisch, T. and Probst, T. 2011. Medicinal and aromatic plants – poverty impact assessment (PIA) of proposed trade support measures in Nepal's medicinal and aromatic plants sector. GIZ, Eschborn.

Kaplinsky, R., Terheggen A. and Tijaja, J. 2011. China as a final market: the Gabon timber and Thai cassava value chains. World Development 39(7): 1177-1190.

MFA. 2012. The right to a better life – strategy for Denmark's Development Cooperation. Ministry of Foreign Affairs, Copenhagen, 38pp.

Mitchell, J. and Coles, C. (eds). 2011. Markets and rural poverty – upgrading in value chains. Earthscan, London, 268pp

Murphy, J.T. and Schindler, S. 2011. Globalizing development in Bolivia? Alternative networks and value-capture challenges in the wood products industry. Journal of Economic Geography 11: 61-85.

NPC. 2011. Nepal status paper - United Nations Conference on Sustainable Development 2012 (Rio+20). National Planning Commission, Kathmandu, 57pp.

OECD. 2012. Green growth and developing countries – a summary for policy makers. OECD, Paris, 27pp.

Olsen, C.S. 2005. Valuation of commercial Central Himalayan medicinal plants. Ambio 34: 607–610.

Olsen, C.S. and Bhattarai, N.K. 2005. A typology of economic agents in Himalayan plant trade. Mountain Research and Development 25: 37–43.

Olsen, C.S. and Helles, F. 1997. Medicinal plants, markets and margins in Nepal Himalaya: Trouble in paradise. Mountain Research and Development 17: 363-374.

Rocheleau, D. 2011. Rooted networks, webs of relation, and the power of situated science – bringing the models back down to earth in Zambrana. In Goldman, M.J., Nadasdy, P. and Turner, M.D. (eds) Knowing nature – conversations at the intersection of political ecology and science studies. The University of Chicago Press, London, pp. 209-226.

UNEP. 2011. Towards a green economy – pathways to sustainable development and poverty eradication. UNEP, Nairobi.

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