



 Swedish Society for Nature Conservation

Report

Protecting the environment:

Why a gender perspective matters.

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Foreword

When fish-stocks are depleted, forests are replaced by monocultures, or when soil and water is polluted by mining and large-scale agriculture, ecosystems are affected, disturbed and often destroyed. At the same time a changing climate is affecting global and local preconditions for living. All this has negative impacts on people, particularly those living in marginalization and poverty. This we know. But how does it affect men and women differently?

This report aims to investigate and show the importance of a gender perspective in the work to protect natural resources, ecosystems and the human rights of people affected by the exploitation of natural resources. In order to reduce the use of chemicals in agriculture we need to know who the users of the chemicals are. In order to preserve the marine ecosystems, we need to involve all those involved in the fishing sector. And to do that we need to know who they are.

The report was developed by Swedish Society for Nature Conservation¹ in cooperation with: International Collective in Support of Fishworkers (ICSF), Movimento

dos Atingidos por Barragens (MAB, Brazil), Pelum Uganda and Asia Indigenous Peoples Pact (AIPP). The report was written by Lisa Segnestam with contributions from Jacqueline Ernerot, Linn Persson, and Melinda Fones Sundell, Research Fellows at the Stockholm Environment Institute.

We hope that this report will provide knowledge and a useful basis for discussion and policy, program and project development. However, more than providing answers, we hope that the report will raise questions about the environment, ecosystems and the linkages to the men and women who are depending on them.

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1 Introduction

Nature provides the resources necessary for all human societies and their economic activities. This is especially true for the rural poor, but not exclusively for them – forests, fisheries, agricultural lands, air, water, and other natural resources constitute the foundation of the lives of all women and men, rich and poor, urban and rural. But nature provides these resources only under the right circumstances. If the ecosystems of the world are not managed properly, people and economies will not be able to prosper.

Many changes that have taken place in ecosystems have had adverse impacts, and people are affected both directly and indirectly. Livelihoods, food security, health, economies, and human security are among the dimensions threatened.² Environmental degradation is also an inequality issue as those who contribute most to environmental destruction and climate change are often not the same peoples as those who are most severely affected. Environmental problems are seldom caused by the poorest or most marginalised sections of the human population. Instead, social groups such as the poor, women, and indigenous communities often find themselves as the ones who are the most exposed and vulnerable to challenges such as degraded land, soil erosion, polluted water sources, and climate change.

Poverty in this sense is not necessarily only linked to income or other financial resources. It is multi-dimensional and does, in addition to lack of financial resources, consist of the lack of other types of resources, including natural (e.g. land and animals), physical (e.g. houses), human (e.g. level of education and health status), and social (e.g. contacts with credit or natural resource management organisations).

Inequality in rights, power, and resources has led to a pattern of ‘winners’ and ‘losers’ associated with ecosystems, natural resources, and changes in climate. Hence, there is a clear link between a healthier environment, poverty, and gender, or in the words of OECD:

Poverty must be reduced in the context of environmental sustainability. Reducing gender inequality is key to all dimensions of poverty.³

This report illustrates linkages between environment and gender in the five main areas of work of the Swedish Society for Nature Conservation (SSNC): agriculture, forests, seas and fishing, hazardous chemicals, and climate change. For each topic a case is presented with the objective to provide the reader with illustrations of how environment-gender relations are influenced by dynamic cultural and political processes, which differ according to particular, place-based contexts.

Together the cases cover the regions in which SSNC and their partner organisations are active with the exceptions of Eastern Europe (Ukraine) and Latin America (Brazil). The aim is to increase the awareness of gender-differentiated linkages, but also of the causal structures and processes in order to enable a deconstruction of linkages in future programme planning and policy development by SSNC and their partner organisations. In the next section analytical categories, for an analysis of environment and gender linkages, are presented. Together they capture aspects that are central to ensure that gender issues are considered in environment and development work.

² UNEP, 2012b, Hassan, R., et al., 2005, Millennium Ecosystem Assessment, 2005

³ OECD, 2001: 10

2 Environment and gender – (de)constructing the linkages

2.1 Defining gender

There are a number of reasons for considering gender issues in relation to environmental work, and these are illustrated in the cases presented below as well as in other literature discussing gender and environment from different perspectives.⁴ The differences in relationships with the environment, whether adverse or favourable, between women and men can be a result of biological characteristics and differences (i.e. a person's sex) as in the case of pregnant women who have been found to attract malaria-carrying mosquitoes twice as much as non-pregnant women. Due to climate change these mosquitos have increased in numbers.⁵ An even more common explanatory factor to differentiated linkages with the environment than biological differences is gender differences. Gender is “a social construction organised around biological sex. Individuals are born male or female but they acquire over time a gender identity, that is, what it means to be male or female”⁶. Or, in the words of Friends of the Earth International:

Gender is not biological, girls and boys are not born knowing how they should behave, think, dress, and react. Their “gendered” masculine and feminine identities are constructed through the process of **socialisation**, which prepares them for the **social roles** they are expected to play. These social roles and expectations differ from culture to culture and at different periods in history. **They can and do change.**⁷

Historically, the construction of masculine and feminine roles has been based on, and has led to further, asymmetries in social and economic power, often with men having more power than women. Further, the social roles that women and men play “usually have a profound effect on the use and management of natural resources.”⁸ They may also differ depending on the context. Countries are such contexts – to

be a woman in a plantation economy in Indonesia may be a completely different thing than to be a woman in a plantation economy in Brazil. But different contexts may also be experienced within a country, e.g. whether you live in rural or urban areas, whether you are old or young, whether you are indigenous or non-indigenous, or whether you are poor or affluent. The world at all its levels (regions, countries, communities, households) is made up of social groups and people with different preferences and goals, but also varying resources and abilities to influence decision-making in their particular contexts.

Accordingly, women and men cannot be seen as homogenous groups. Their ethnicity, class, age, nationality, and a number of other social variables interact to create differential positions. For example, while indigenous men as well as women are marginalised in societies in Southeast Asia, a patriarchal culture puts indigenous women in an even more vulnerable position.⁹

Another example can be found in research on gender and climate change in Nicaragua, where younger women have been found to be less vulnerable to drought than older men as they were more mobile and thus could look for a job in urban settings. At the same time, the older men were less vulnerable than women of their age since they had more access to various resources, giving them more capacity to adapt to the drought situation. Also within the group of elderly women differences could be found between female heads of households and women in male-headed households, where the latter were less vulnerable since they could take advantage of their husband's resources.¹⁰ By looking at the details of the social constructions behind division of labour and resource access and control a gender analysis can identify these differences and not assume all women nor all men to be the same and always have needs and opportunities that contrast with each other. For the sake of legibility ‘woman/women’ and ‘man/men’ will be used hereafter, however, if not otherwise specified.

4 See e.g. Dankelman, I., 2010b, Rocheleau, D., et al., 1996

5 Röhr, U., 2007

6 Gregson, N., et al., 1997: 53

7 FOEI, n.d.: 6 (Emphasis in original)

8 UNEP, n.d.

9 AIPP, 2013

10 Segnestam, L., 2014

2.2 The analytical gender framework

This section describes the analytical categories that a gender analysis should cover if one wishes to understand differentiations in linkages to the environment:

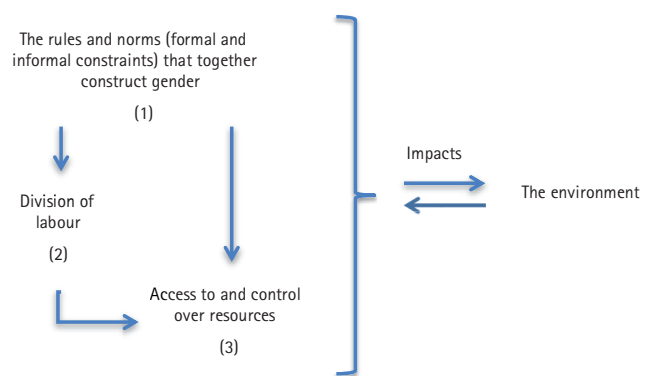
1. **Formal and informal constraints** – the rules and norms that shape the behaviour of actors in society (from global to individuals) and that construct our social gender identities¹¹
2. **Division of labour** – the tasks and responsibilities men and women are expected to fulfil respectively, and
3. **Access to and control over resources** – what resources, in the broader sense, men and women have access to and power to decide over.

The analytical framework can be depicted in a simple flowchart (Figure 1) showing how the formal and informal, humanly designed, constraints affect the division of labour as well as access to and control over resources. This influences one's needs and uses of the environment and its resources. Therefore, to determine what this implies for the gender differentiation in linkages to the environment one has to consider what the above means for the impacts of environmental degradation on women and men respectively as well as how they affect ecosystems and natural resources with their respective actions.

2.2.1 Formal and informal constraints

It is clear from research as well as practice that gender, as a social and not biological phenomenon, is constructed by the “humanly designed constraints”¹² in a context.¹³ Such constraints play a significant role in shaping the behaviour of organisations and individuals in a society and thus

Figure 1. The analytical gender framework



people's linkages with the environment. These include norms and rules that generally make women reliant on livelihoods that depend on natural resources, or that expose them to environmental problems, without much capacity to choose another livelihood strategy enabling them to earn an income in case of degrading natural resources.

Some of the constraints are **formal rules**, e.g. laws prohibiting women from being landowners or labour laws discriminating against women or men. Several of the documents provided by SSNC's partner organisations witness to problems in areas that are often regulated by legal frameworks or other formal structures (see e.g. Barcellos and Batista Ferreira (2008) who describe how indigenous women were particularly affected by the appropriation of land by agroindustries wishing to develop eucalyptus monocultures in Brazil). They also explain that it is most commonly not the lack of gender equality laws that is the problem. Instead, there are other, more **informal constraints** that tend to override the formal rules (e.g. social norms, traditions, and values).

One such example can be found in a community-based forest management project in the Philippines reported on by WRM (2005) where land use certificates and land titles were issued only to men as a result of a dominating male model and a failure to recognise women's contribution to the household and community. Gender inequality was thus reinforced in the community. Similar findings are presented

¹¹ Note that these constraints may also concern the other social variables mentioned above, e.g. ethnicity, class, age, and nationality, and that are part of what constructs gender.

¹² Ostrom, E., et al., 2001: 5

¹³ See e.g. Enarson, E. and B. H. Morrow, 1998, CCMIN-AIPP, 2014, Segnestam, L., 2009, CGIAR Research Program on Aquatic Agricultural Systems, 2012

in Farnworth et al. (2013) but with regard to land tenure in Kenya. These norms, traditions, or value systems are shared understandings about the ‘do’s and don’ts’ in a specific context. Also quite commonly such things as the patriarchal systems in place in many countries in the world entail a subordinated position for women reflected in inequality between men and women in the household, community, and other societal levels.¹⁴ Whether the constraints are formal or informal they are not static but are shaped and transformed by the members of society.

2.2.2 *Division of labour and resources*

The informal constraints in a particular place determine what tasks women and men generally perform within the household as well as in the community, i.e. the gender division of labour. This may therefore vary depending on the context although often women’s roles and responsibilities are connected to the private and men’s to the public sphere. This also means that women’s labour is often unpaid, further limiting their options and choices. The **division of labour** is also one of the main aspects of gender-differentiated linkages to the environment as can be seen in the cases presented in the following sections. A review of literature on women in fisheries describes women’s labour:

Women contribute unpaid and (under)paid labour to the small-scale fisheries, in which fish production is organised around the traditional household. They also, often simultaneously, contribute labour for wages as well as unpaid labour to the capitalist or modern, industrial mode of fish production.¹⁵

The division of labour, together with the rules and norms, in turn determines what **access to and control over different assets** women and men have respectively. The access to and control over assets is often unequal, which commonly puts women in a position where they are dependent on their husbands or other men in their close

surroundings (e.g. brothers), affects their decision-making power, and provides them with less capacity to implement strategies to protect the environment or themselves and their families. It is necessary to analyse who is controlling the resources and not only to look at the distribution of resources, such as land, forests, and clean water. If ‘control’ is omitted from the analysis there is a risk that the decision-making power is disregarded. Even though one has access to a resource, it is not necessarily so that one also has the power to decide about its use. A gender analysis of a situation where, for example, the woman has access to her husband’s land but no decision-making power regarding what to grow or sell could therefore lead to inappropriate recommendations or solutions for sustainable practices and equitable development (for a concrete example see the case on agriculture in Uganda, based on PELUM Uganda country secretariat (2013) below).

Taken together, the above becomes an analytical framework (see Figure 1) that can be used in the examination of environment and gender linkages: the formal and informal, humanly designed, constraints, the division of labour, and the access to as well as control over resources. The different ways the constraints shape the behaviour, tasks, responsibilities, and resources of men and women respectively, results in differentiated needs and uses of the environment and its resources and, thus, in differentiated impacts on the environment and impacts of environmental degradation. It is clear from the SSNC cases as well as from other sources that environmental concerns affect differently, but different social groups also affect the environment in different ways. Impacts as well as actions are likely to differ as a result of different roles and tasks, in combination with the access to and control over various resources, all of which depend on social variables such as gender, age, and ethnicity. For example, women’s mobility may be hampered by cultural restrictions or by mere reproductive tasks such as childcare, disabling them from choosing a labour strategy located outside their homes.

¹⁴ FOEI, n.d., Deere, C. D. and M. Leon, 2001

¹⁵ Biswas, N., 2010: 8

2.3 Methodology

The report has been performed as a desk study where the issues for analysis (constraints, division of labour, access to and control over resources, and impacts) have been used in looking at a selection of illustrative cases from the work of SSNCs partner organisations. These have been provided either by SSNC in meetings on those working with the five focus areas covered below (either within the Thematic Departments or the Department for Global Coordination at SSNC's headquarters in Stockholm), or by the partner organisations themselves. They were selected since they bring up interesting dimensions of gender and environment linkages. None of the cases covers all of the analytical categories, but together they provide a picture of linkages between the environment and gender, and how such linkages as well as gender inequality can be made more visible. The documents that were analysed are mainly analyses or descriptions of women's situation in relation to different settings. Hence, they do not discuss men's situation in the same detail as they do women's. Nor are they analyses

of how women and men affect the environment respectively even if they all touch upon this. What potential differences there are in how women and men affect the environment is even less discussed in the documents. All of these aspects are, as a result, less discussed than what might explain women's capacities to influence their own lives and livelihoods. Having said that, what people do, i.e. the division of labour, is central to both their influence on the environment, and how they are affected by environmental degradation. Where the analysed material includes intersections between characteristics, e.g. ethnicity and gender, they are brought up in the cases below. The cases have been complemented by other literature for a description of the environmental context in the respective countries.

Each of the cases has been read in order for sections to be identified that could be linked to the issues for analysis. The sections that fell under the same issue (e.g. division of labour) were marked and put together in a separate document. This systematisation of the cases facilitated the process of understanding the issues within the individual cases, but also allowed for a comparison between the cases.

3 Agriculture



Female farmer Haregwa Gobeza has transformed a rocky ravine in northern Ethiopia to an organic orchard.

Agriculture is central to human life, as a provider of food, fibre, fuels, medicinal plants, and incomes. Over 30% of the available work force is employed in the sector globally, in many countries it is the main employer of female workers, and more women than men are agricultural workers.¹⁶ Of existing farms in the world, more than 90% are smallholder farms, which commonly have a higher yield per hectare than larger farms thus contributing to a larger share of a country's food production than the share of land they manage.¹⁷ With an increasing population more food and other agricultural products are needed and agricultural production therefore needs to increase and/or intensify to reduce poverty and promote food and fuel security. This leads to increased global environmental problems such as deforestation,

greenhouse gas emissions, and global warming.¹⁸

Smallholder farms are central to meeting these challenges. Women producers, while making up a large part of the smallholder farmers, are notable for their lack of productivity as compared to men.¹⁹ This lack of productivity is caused by a number of factors, most notably their difficulties in accessing productive resources (land, inputs and credit) as compared to men and a number of socio-cultural and practical difficulties impairing women from participating in decision-making processes at local and even household levels.²⁰

Much has been made of the importance of the agricultural sector to overall growth and economic development,

16 ILO, 2010: 5

17 FAO, 2014a: 2

18 Davis, M. and M. Fones Sundell, 2012, FAO, 2014b

19 O'Sullivan, M., et al., 2014

20 See the case on gender and agriculture in Uganda below and Farnworth, C., et al., 2013

particularly in poor countries (see e.g. the below case on gender and agriculture in Uganda). In light of population pressures and physical/environmental limitations to expanding cultivated agricultural land area, it would seem (and this is confirmed by the literature and public policy debate) that focusing on increasing the productivity of smallholder farmers, especially women, is the key towards the intensification of agriculture necessary to feed the 9 billion that the world population is projected to become by 2050. But it is not enough to produce more; it has to be done sustainably. Occupying a large share of agricultural land and being responsible for much of the food production, smallholder farmers are central to agricultural concerns and thus need to be supported to be able to combine increased productivity with the conservation and improvement of key natural resources.²¹

In addition to the potential role of increasing food security at a local and global level evidence is abundant that poverty and the desperate search for food sources often results in a short term focus where farmers use environmentally destructive practices even when they are aware that they are not sustainable.²²

The case studies below illustrate how these drivers of low agricultural productivity impair the intensification of agriculture in specific situations, focusing primarily on the gender division of labour, but beg the question on how to address these factors to improve gender balance and productivity in agriculture.

3.1 Gender and agriculture in Uganda

The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) in Uganda identifies agriculture as “the most important sector of the Ugandan economy” and “the key determinant in the country’s efforts to reduce poverty in the immediate years ahead”²³. It not only contributes significantly to GDP (even if population growth is even larger, implying a decreasing agricultural GDP/cap) as well

as export revenues, it also provides a large share of industrial raw materials. A large share of the Ugandan population aged 10 years and above are employed in the sector (77% in total, 71% in subsistence agriculture) and depend on it for their incomes, and despite the growth of other sectors it continues to be the largest employer and primary mainstay for unskilled labour.²⁴

Among the most central agricultural products grown in Uganda are cereals (maize, millet, rice and sorghum), beans, sesame, root crops (cassava, Irish and sweet potatoes), and export crops (cotton and coffee). In addition to these, cattle ownership has increased significantly including cattle, goats, sheep, pigs, and chicken. Finally, the country has a large fishing industry, which falls under the responsibility of the same ministry as that for agriculture (MAAIF). In 2004, fisheries were estimated to employ 300,000 people, to have as many as 1.2 million people dependent on them for their main source of household income, and to supply 17 million people per year with dietary protein.²⁵

Uganda’s agriculture provides low yields and fisheries catches have declined. Considering the number of people that are active in and dependent on the sector, this decline risks leading to increased poverty and food insecurity in the country. The decrease in production is partly a function of a lack of modern technology (e.g. predominant usage of the hand hoe and a limited use of inputs, such as pesticides and fertilizers, which is, in addition, used even less by women increasing the gender gap in productivity²⁶), but environmental quality aspects are also visible.²⁷ Pests, vectors, and diseases are by MAAIF (2010) identified as probable main causes of losses in the agricultural sector, and diminishing fish stocks as well as over-fishing as causes behind reduced fish catches.

The recommendation by O’Sullivan et al. (2014: 33) that “[p]olicy-makers should consider improving all farmers’ access

21 FAO, 2009, Ashby, J., et al., 2009, FAO, 2014b

22 Farnworth, C. R., 2010, Meinzen-Dick, R., et al., 2011

23 MAAIF, 2010: 1

24 Ibid., UBOS, 2005

25 MFPED, 2004: 78-79, MAAIF, 2010

26 O’Sullivan, M., et al., 2014

27 MAAIF, 2010

to these inputs, with a focus on helping women overcome the specific barriers that currently limit their use of inputs” would only lead to more environmental degradation, though. Instead, striving for a more sustainable use and management of natural resources, e.g. organic farming with less chemical use, would benefit the environment as well as humans.

Other environmental aspects with linkage to agriculture include land degradation, soil nutrient depletion and erosion, drainage, overharvesting and burning of wetlands for agricultural use, encroachment of protected areas, and water quality. Some of these are partly a result of agricultural activities, such as land degradation (e.g. clearing land for agricultural production, overgrazing, and bush fires) and pollution of surface and ground water due to the use of agro-chemicals.²⁸ Most are, however, also problems affecting agricultural productivity in addition to being a result of agricultural activities. One such example is soil erosion, which in many districts is caused by either poor farming or overgrazing and is estimated to affect up to 90% of areas, constituting the greatest reason for GDP losses due to environmental degradation.²⁹ At the same time it has led to decreases in maize yields of as much as 190 kg/ha in some areas, and silting of rivers with problems of eutrophication and reductions in fish populations as consequences.³⁰

Agriculture as well as fisheries are also affected by climate change, which is becoming more pronounced in Uganda with increasing temperatures and more frequent periods of climatic hazards, including droughts, heat waves, floods, and storms. Such trends do not only risk having severe impacts on the poor and vulnerable who are dependent on rain-fed agriculture, but also on export revenues due to failures in, for example, coffee yields.³¹

Interpreting what PELUM Uganda says in their report

on gender and sustainable agriculture³², a gender division of labour is clear within the agricultural activities. On the one hand, more women are involved in the agricultural sector than men (82% and 71% respectively). On the other hand, they are to a large extent referred to the subsistence agriculture, with the responsibility of growing food crops to ensure the food security of the families while the men dominate the market oriented production.³³ This could partly be explained by the women’s responsibility of taking care of the household chores and children, such as is common in other countries as well. This gender division of labour impedes women from leaving their homes, participating in workshops as well as being employed elsewhere. From PELUM Uganda country secretariat (2013) one gets the impression that women are also considered too weak for certain agricultural practices, such as construction of contours and compost making.³⁴ Thus, women in general and elderly women in particular, become dependent on the male household members to collaborate with them. Women’s mobility as well as capacity to diversify their livelihoods is further constrained by cultural restrictions, such as it not being acceptable for them to ride bicycles. Hence, they do not have the same means to transport their agricultural products to the markets, which further reduce the benefits they could get out of their agricultural work.

PELUM Uganda country secretariat (2013) points to a number of ways that socially constructed norms similarly create gender inequality in the access and control over resources. Expressions such as it not being “easily acceptable” for women to purchase land and “unacceptable”³⁵ for a married woman to own land (despite women being the main land users), women not being “expected to own large

28 MAAIF, 2010, Sekitoleko, V., 1993

29 Olson, J. M., 2003: 11 Et 14

30 MAAIF, 2010: 31, Olson, J. M., 2003: 5

31 MAAIF, 2010

32 PELUM Uganda country secretariat, 2013 Note that this report is not primarily a report on gender and agriculture. Instead, it is “a gender analysis for the sustainable farming systems programme to assess the capacity of [PELUM Uganda’s] member organisations’ responsiveness of their agriculture related interventions to the gender specific needs of both men and women beneficiary smallholder farmers.” Ibid.: 4 Within the report there are also sections describing the context within which the organisations are active. These are the sections that the case study is based on.

33 UBOS, 2006

34 These activities are in PELUM Uganda country secretariat 2013: 21 said to be “labour intensive for women”, and therefore considered less accessible to women. An explanation to why they seem to be less labour intensive, and thus more accessible, to men is not provided. Hence the interpretation that women are considered too weak for such practices.

35 Ibid.: 19

livestock³⁶, and women needing to “seek permission from the men³⁷ for implementing long-term agricultural practices can be found throughout the report. As a result, men are mostly the ones owning cows and with land tenure, and also the ones with access and control to the good quality land, which they use for cultivating cash crops (e.g. coffee, cotton, tobacco) and for exploring new seed varieties. Women, in turn, focus on cultivating indigenous crops and vegetables, on raising poultry, and on kitchen gardens – a source of nutritious food and income for their families. In combination with the perception of women as weak, the uncertain relations to land among women affects the adoption rate of long-term sustainable agricultural practices (e.g. agroforestry and contour farming), since women lack the incentive to undertake long-term investments, with potential negative impacts on the environment.³⁸

Finally, the access to financial credit services is limited for women, due to the lack of collateral (PELUM Uganda country secretariat (2013) does not mention what can be used as collateral, but according to FOWODE (2012: 5)2014</access-date></record></Cite></EndNote> land can be used as collateral, giving male headed households an advantage). Thus, their access to modern and high-tech equipment, such as drip irrigation systems is also limited. Women are, however, said to be more active in more informal saving and credit schemes from which they get some resources to buy, for example, seeds and poultry.

In summary, PELUM Uganda’s report is an illustrative case of how social constructions affect women’s relations to agriculture in the Ugandan context. Judging from what is said in the report, the above mentioned cultural aspects are more influential on gender relations than more formal political aspects in the case of Uganda. Hence, various socio cultural norms and perception, such as women being weaker than men and it being less acceptable for women to own land affect the gender division of labour within the households as well as in the agriculture. This, in turn, has a

major impact on women’s situation, since they often end up having less access and control to enumerated work opportunities as well as various resources. These resources were financial (e.g. salary, agricultural revenues, and credits), human (e.g. capacity building), natural (primarily land but also larger livestock) and physical (e.g. irrigation technology). But it also brings with it a greater consequence since “[a]ccess and control of resources for agriculture production was the key determinant for ensuring sustainable and equitable agriculture production and social economic transformation for both men and women.”³⁹ Women are thereby excluded from a potential upward spiral in resources and capacities.

3.2 Women and organic agriculture in Davao, Philippines

The southeast part of Davao City is surrounded by small farms cultivating coconuts, corn, rice, green roots and fruit trees. As a result of the area’s fertile land and even rainfall a growing agribusiness also exploits the district with traders providing seeds and pesticides to the farmers leading to debt and poverty. Some farmers have been forced to give up their land for long-term leases, small settlements, and false promises of employment at the commercialised farms. Cruzada (2013) describes how there are a few women farmers not giving in to the demands of the agribusiness companies. To be able to stand up against commercialised corporations they have organised themselves into small cooperatives focusing on subsistence farming. With support from MASIPAG (Farmer-Scientist Partnership for Development) and METSA (Moral, Economic, Technological, Socio Spiritual Aspirations) Foundation, a few women have been trained in sustainable farming practices (diversified and integrated farming systems) without expensive chemicals and GMO seeds. Due to the women’s domestic responsibilities it has required work and support from the organisers’ side:

36 Ibid.: 21.

37 Ibid.: 19.

38 See also MAAIF, 2010

39 PELUM Uganda country secretariat, 2013: 19

It is a challenge to get the attention of women focused on organic farming and on community, as they are quite busy taking care of their 4 B's: 'bata, bana, balay, ug baboy' (children, husbands, households and pigs) at the same time looking for the day's money needs. Although women are left to take care of the farms, farming is still considered a man's job. And then after we convince and train the women, they still have to convince their husbands, who were not in our trainings and who totally grew up on chemical farming.⁴⁰

Why the men were not in the training is not further explained in the report. Most likely the initiative was specifically directed towards women, thus not including the men. Other reasons could be that men were unwilling to depart from their familiar practices of using chemicals in farming, not believing that alternative ways could be as productive (this is supported by a quote in the report where a woman describes how her husband was convinced of the benefits only after they had recorded and compared all costs and incomes relating to his and her farming respectively⁴¹); that men primarily are involved in farming with high-yield varieties for commercial purposes; that women were more willing to test something new as long as they managed to cross the division of labour and began farming (a task that traditionally has fallen within the male domain) and that men were more occupied with urban livelihoods.

Since the proposed technologies work well with existing rain-fed farming practices, the initiative has been so successful that the women who participated in the training have not only satisfied household food needs, they are now also able to sell their surplus collectively at the market in the city. It has furthermore led to a greater appreciation for biodiversity among participants. Hence, the environment benefits in several ways, both as a result of fewer agro-chemicals being applied, and through an increase in

awareness of environmental values. At the same time, women have become empowered through an increased participation in farming and the initiative on organic farming.

The women's empowerment has also resulted in successful campaigning together with other people's organisations and non-governmental organisations (NGOs) in the city against the spraying of chemicals as well as against the application of biotechnology on a local eggplant variety. One of the women practicing organic agriculture speaks of some of the negative effects of chemical use, but also about existing formal constraints to organic agriculture:

We believe that all farmers should refrain from using chemical input, inputs, as this leads to debt and more poverty. We are helping to train other women farmers, but many do not commit themselves because the Department of Agriculture (DA, of the Philippine government) itself promotes chemical farming.⁴²

This later changed when the Department of Agriculture began to implement the Organic Agriculture Act of 2010. Cruzada (2013) stresses that this is just the beginning. The process of women's food sovereignty continues. As long as their locally sustainable production methods of healthy food are not part of national laws and local practices and they do not have their own space at the market, the struggle against the chemical farms, agribusinesses and imported foods will continue.

The above illustrates how external influences, in this case corporate farms taking over a small-scale agricultural sector, can eventually lead to changes in the gender linkages to agriculture. Since farming is still considered to be a man's job, the empowerment of women has required a change in prevalent norms, thus opening up for a different division of labour than what was previously the tradition. Another tradition that had to be changed was the use of chemicals in farming, which men were used to. The reduced use of

40 Cruzada, E., 2013: 35-36

41 Ibid.: 36

42 Ibid.: 37.

chemicals met formal constraints as well, further challenging the change implemented by the women who chose to begin with organic farming. Hence, outside interventions on local level may improve the environment, directly as well as indirectly, by successfully empowering women at the same time as lobbying for small-scale organic farming to be promoted by laws and regulations.

By finding alternative ways, in this case collective organic farming with fewer chemicals, women's access to and control over a variety of resources (financial, natural, and social) increased and household challenges such as the

dependence on the husband's income, constant food insecurity, and a life of poverty were overcome. The women have thus changed their livelihood strategies, and in addition they have become successful examples for other women to look at and start to practice sustainable organic farming as a successful step towards food sovereignty and independency from the area's large food produce corporations. Hence, by empowering the women, the environment – soils, water, and biodiversity – is likely to experience positive effects.

4 Tropical forest



MARIA RYDLUND

Rainforest timber transported away, in the background seedlings of oil palm. How is this brutal change in the environment affecting women and men?

Men and women use tropical forests in different ways. Trees may provide valuable construction material for markets or building (usually dominated by men) while women collect firewood mainly consisting of fallen branches. When men collect wood for fuel, it often involves felling the trees and processing them in some form, often as charcoal. Additionally, forests provide the habitat for medicinal plants, possibilities for bee-keeping and hunting, and a source of products such as fodder. The gender division of labour differs among social groupings. Yet, it can be said that men participate more often in hunting activities and women collect medicines, fodder, fuel wood, wild plants, or fruits for domestic use. Women also more often use the products to feed, shelter, and heal their families. While less well-off segments of the population rely on habitat related forest products and leave the forest as such intact, relatively

better-off segments of the population, be they men or women, tend to exploit resources that include harvesting the trees themselves.⁴³

Clearing natural forests to be able to use the land for plantation forestry, such as oil palm plantations in the case below, or other uses brings a number of serious threats to ecological systems, both at local and global levels. While forestry brings with it many of the same characteristics in terms of environment and gender as does the agricultural sector, there are some differences which are primarily the function of the more permanent nature of production; rather than the annual/semi-annual planting which characterises agriculture. Agro-forestry is a special case where the advantages of permanent vegetative growth in the

⁴³ UNDP, 2004, CPF, 2012, Ndungo, C., et al., 2010

form of bushes or trees are integrated into the more seasonal activities of planting agricultural crops or feeding on-farm animals.

The division of labour causes women to be more negatively affected when the tropical forests are degraded or deforested to make room for agriculture, agro-forestry, or forestry. For example, women and girls become forced to travel farther from home and spend more time as well as labour searching for and carrying fuel wood as well as other products that are vital to their subsistence. Research has also shown that the involvement of women in forest management can significantly improve conservation outcomes.⁴⁴ Clearing natural forests also poses obvious threats to biodiversity, survival of threatened species, and climate change. Parallel to the biological threats created by monocropping patterns, plantation forestry also introduces an economic power structure whereby those who control the plantation reap its financial rewards while those who do not are left to pay the environmental consequences.⁴⁵

4.1 Gender and oil palm plantations in Indonesia

Oil palm plantations in Indonesia have gone from 3.6 million hectares (ha) in 1961 to 8.1 million ha in 2009.⁴⁶ This expansion has had environmental as well as social impacts, both of which are common problems with plantation economies. One of the main environmental impacts is deforestation, with the release of CO₂ into the atmosphere as a consequence.⁴⁷ Even though palm oil is used as biofuel it may therefore be more polluting than conventional gasoline. The conversion of forests is also a concern for the country's biodiversity since the forests are the habitat of many endemic as well as rare species, such as the Sumatran tiger or the orangutan. Finally, the oil palm industry has been found to affect both the quantity and the quality of local water sources.⁴⁸

But it is not only the environment that is negatively

affected by these changes. There are plenty of (often indigenous) people in Indonesia who depend on the forests for their livelihoods and who lose their land due to the expansions of the oil palm plantations (an estimated 60-90 million of a 220 million population in 2008⁴⁹). The common pool resources provided by the forests that have been privatised and cleared for oil palm production supplied rural poor with a large share of their food, fuel, and incomes. Food (e.g. rice, corn, vegetables) as well as cash crops (e.g. rubber, pepper, resins) were previously cultivated, and many ecosystem goods and services could be utilised (incl. wild animals, medicines, firewood, and building materials). The plantation model furthermore risks reducing the communities' ability to diversify their livelihoods, thus making them more vulnerable to the effects of climate change.⁵⁰

For different reasons, women have been found to be more negatively affected by these changes than men. In *The Oil Palm Plantation System Weakens the Position of Women*⁵¹ the authors take a closer look at two different types of plantations that exist in Indonesia – the nucleus estates (large scale industrial plantations) and the smallholder estates (two hectare plantations associated with a transmigration scheme). Like the scale of oil palm plantations, gender relations changed during the Suharto era, known as the New Order. Policies resulted in women being restricted to wives, mothers, and homemakers. Culturally, women were in the New Order ideally “meek, soft spoken, placing no emphasis on personal interests, placing husband's interest above all over hers, and obedient wife and an obedient daughter”⁵² and seen as “‘weak’ because of their femininity”⁵³. Within the transmigration program, introduced already during the Dutch colonial period, the ownership of land goes to the head of household, which in reality means the husband. Being a policy for families, it has, in addition, resulted in unmarried women

44 Agarwal, B., 2010, Agarwal, B., 2009

45 UNDP, 2004, CPF, 2012, FAO, 2011

46 Rist, L., et al., 2010: 1010

47 Greenpeace UK, 2013, Fargione, J., et al., 2008

48 Marti, S., 2008

49 Ibid.: 25

50 Levang, P. and the FPP-Bulungan team, 2002, Marti, S., 2008

51 Surambo, A., et al., 2010

52 Unknown source cited in ibid.: 21

53 Ibid.: 33.

or widows not being able to own land and, thus, being denied the possibility of partaking in the program with smallholder estates.

Still women have taken part in the plantations. Due to the men being the only ones who are recognised as smallholders, women are perceived as mere 'helpers' and 'partners' of their husbands. This has put them in a subordinated and exploited position, resulting in them being labourers, but without remuneration. Work at the nucleus estates has the advantage of being remunerated, providing families with an extra income, but comes with other costs. As a consequence of women being seen as extra careful in their handling of seedlings and in applying chemicals/spraying those are tasks that they often are responsible for in the nurseries and on the plantations. This exposes them to hazardous substances that they do not know to protect themselves from since they are not informed about the toxicity of the chemicals nor able to read the labels on the containers (women are more likely to be illiterate). Health problems such as shortness of breath, vomiting, and skin and eye complaints have thus been reported among those involved in the spraying. Pregnant women risk being affected even worse by this exposure, since certain chemicals used in agriculture may cause negative health effects in the unborn child.⁵⁴

The expansion of palm oil plantations also requires land that local communities have used for their livelihoods, forcing them to look for other income sources, such as working on the oil palm plantations. The gendered division of labour means that men focus on the plantation work, just as women, but the latter still have to carry on with their reproductive chores. Hence, working on the plantations implies a double work burden for the women, prolonging their workdays to be able to handle all their responsibilities. Several of these responsibilities have also become more difficult, forcing women to go further to access the natural resources they use on a daily basis, including firewood and water when the forests and the land are cleared and taken

over to make way for oil palm.⁵⁵ Similarly, women's social spaces and participation political activities and public spaces have been reduced with the increase in plantations and the roles imposed on them by the policies within the New Order.

The stereotype view of women as 'partners' of their husbands, rather than as independent individuals, has also obstructed them from accessing land and loans, as well as other development programs.⁵⁶ This is, thus, a clear example of how informal constraints govern the access to resources. Although not stated explicitly in Surambo et al. (2010), this most likely leaves them with less capacity to implement strategies to improve their situation and to reduce the impacts experienced by the expansion of oil palm plantations.

As the above illustrates, the linkages between forestry, in this case oil palm plantations, and gender are complex. Links, such as described in the section on the analytical framework, can be seen from a structural context of formal policies and informal value systems to a gendered division of labour, with implications for the access to various resources, including financial, natural, human (health), and social. In this particular case, women end up in a discriminated situation with a double work burden, less capacity to affect their lives and livelihoods, and less power in the household as well as in public spheres. Finally, the point on single women and widows not being able to become smallholders shows that women and men are not homogenous as groups, leaving certain groups of women even more vulnerable than others.

54 Jurewicz, J. and W. Hanke, 2008, Marti, S., 2008

55 Down to Earth, 2007: 2

56 What possibilities there were to own land for women before the New Order is not discussed in Surambo et al. 2010

5 Marine environment and fishing



Women play a major role in the processing and sale of fish, but is often overlooked in decision-making processes.

Marine and coastal capture fisheries are one of the most important activities for coastal populations around the world. The Food and Agriculture Organization (FAO) estimates that in 2012 almost 60 million were involved in the primary sector of capture fisheries and aquaculture, more than 15% of which were women.⁵⁷ An additional 135 million were in 2008 employed in the secondary sector (pre-harvest activities, such as net-making and –repair and bait preparation, as well as post-harvest tasks, including fish processing, vending, and distribution).⁵⁸ While men mainly work with the fishing and fish farming activities, women

constitute up to 90% of the secondary sector workers.⁵⁹ Ninety per cent of the people directly employed in fishing and aquaculture are small-scale fishers who are dependent on inland as well as coastal fishery resources for their livelihoods and food security.⁶⁰ Women are heavily involved in the small-scale fishery sector around the world. However, due to a lack of data in national statistics, their labour, such as their gleaning or near-shore fishing, is to a large extent invisible. In countries where family enterprises are common, women are also responsible for the administrative work.⁶¹

57 FAO, 2014c: 6
58 FAO, 2012: 108

59 Ibid.: 46

60 FAO, 2005b: 1

61 Biswas, N., 2010, Weeratunge, N., et al., 2010, FAO, 2014c: 31

FAO furthermore assumes that each person engaged in primary and secondary fisheries production has, on average, three dependents and thus concludes that the livelihoods of about 10-12% of the world's population are secured this way.⁶²

Due to overfishing, the use of destructive fishing methods, and in many places unregulated fishing activities, catches have levelled out or declined dramatically over the last 30 years. Consequently, aquaculture production has continuously increased, which has brought with it several environmental impacts such as chemical and nutrient pollution, transferred diseases and viruses from farmed to wild species, and alternations in the genetic diversity due to escapes of farmed fish.⁶³ Coastal ecosystems around the world are threatened by several other factors as well, among them climate change, land use change, acidification, variation in sea surface temperatures, destruction of coastal wetlands, forests, coral reefs, and other habitats, and pollution. These do not only affect the fish and other organisms living in the oceans and freshwater, but also the livelihoods, food security, and health of humans. Major conflicts have also arisen due to unclear traditional, local, and commercial property rights (rights that have been bought to gain access to resources) in coastal areas. The main divide between those affecting and those being affected goes between rich and poor. Hence, while the affluent economies engage in a large-scale fishing industry, which also is the main cause behind overfishing, small-scale fisheries and aquacultures are often poor in a multi-dimensional way, lacking financial capital, land ownership, decision-making power, education, and several other assets.⁶⁴

Both the impacts on the marine environment and the negative consequences of its degradation look different for men and for women, where women are often found to be more vulnerable to reduced fish catches. The reason for these differences is the context in which they live, which influences

the distinct and often complementary activities that men and women, are engaged in. Formal as well as informal structures, such as laws, regulatory frameworks, customary beliefs, and norms, put women in a disadvantaged position within the fisheries sector. Hence, economic status, power relations, and access to resources (such as organisations, credits, and infrastructure) vary greatly which affects their respective relation to the fisheries sector.

As a result of social norms and domestic responsibilities, women are rarely involved in commercial offshore and long distance capture fishing. They are also excluded from profitable markets, which make them lose even more in an increasingly globalised market for fisheries. Instead they are, as mentioned above, involved in invertebrate collection, near-shore fishing, as well as in pre- and post-harvesting activities, all of which are less profitable. Despite their role in the pre- and post-harvest sector, they seldom get highly paid posts in the processing factories. The depletion of marine and aquatic resources and the degradation of the aquatic environment further limit the access to resources, and women often have access mainly to fish of poor quality or less profitable fish, such as small fish for home consumption.⁶⁵

5.1 Women fish vendors in Mumbai

The fisheries sector in India has increased significantly over the past decades, with an increasing share of GDP and production going from 0.75 million tons in 1950-51 to 9.6 million tons in 2012-13 (only China produces more).⁶⁶ Production has undergone significant changes in several respects:

- a. from being dominated by marine fisheries to consisting now mainly of inland fisheries;
- b. from marine as well as inland capture fisheries being the main production to being dominated by aquaculture, and especially freshwater aquaculture,

62 FAO, 2014c: 6

63 FAO, 2005a

64 Biswas, N., 2010, FAO, 2014c, Agardy, T., et al., 2005, Pauly, D., et al., 2005

65 FAO, 2012, FAO, 2005b, Kumar, A., et al., 2003

66 FAO, 2015: 1

which comprises 95% of the total aquaculture production⁶⁷; and

- c. from being a highly traditional activity to becoming a well-developed industry, contributing job opportunities, foreign exchange, and incomes to the Indian economy.⁶⁸

There are a couple of environmental differences that partly explain the shift from marine capture fisheries to freshwater aquaculture. Being located in the monsoon belt, India has plenty of water that can be used for aquaculture and to replenish the ponds, tanks, beels, derelict waters, lakes, reservoirs, and irrigation canals used for this purpose. There is, furthermore, scope for expansion of the area used for freshwater aquaculture.⁶⁹ Coastal aquaculture has experienced some conflicts, though. These have largely been caused by “disease outbreaks in shrimp farms, environmental pollution due to overcrowding of farms, salination of drinking water wells, conversion of paddy fields into shrimp farms, causing displacement of labour etc.”⁷⁰

In comparison, fish production from natural waters (e.g. lakes and rivers) has declined due to an increase in water control structures, overfishing, pollution, and habitat degradation. Likewise, marine fisheries have been adversely affected by pollution of coastal waters, decreasing areas of mangroves, and reduced fish stocks due to heavy fishing pressure.⁷¹

Apart from its major contribution to the Indian economy, the fisheries sector is important for food and nutritional security as 14.5 million people are estimated to depend on fisheries activities for their livelihoods.⁷² Among these are the *koli*⁷³ involved in fisheries in Mumbai, 48.1% of whom

were women in 2010.⁷⁴ The challenges met by these women are explored in *Women Fish Vendors in Mumbai: A Study Report*⁷⁵. Women in fisheries in the communities in and around Mumbai can mainly be found within the post-harvest sector in which they are involved throughout the marketing chain – from buying fish in the nearby harbour to selling it at one of the many city markets. Women have worked in the local fish markets for generations. However, the younger generation (women as well as men) look for work elsewhere, as the economic return of small-scale fisheries in Mumbai is unstable.

Women travel to the market from different areas in and around Mumbai. Commuting or travelling long distances to the market is often associated with high costs. Times with little or no money can require them to stay at home which keeps them away from the market and other social networks. The working day of a woman fish vendor starts early, often around 5 am and she does not return home until late in the afternoon. The day is hectic and it is not uncommon for the meal during a working day to only consist of tea and a snack. A proper meal is only consumed in the evening together with the family. This has a negative impact on women’s health with consequences such as malnutrition and fatigue.

Fish can only be bought from the harbour ‘cash-in-hand’. The author says many women do not get involved with formal credit systems as it entails paperwork, which they cannot fill out themselves – illiteracy among the women fish vendors is common. Instead, according to Peke (2012), many have turned to fisheries co-operatives for loans. They also rely on informal loans from relatives or on pawning their own jewellery. Jewellery is often bought as a form of savings. This implies less or no access to a range of resources such as food for their own consumption, fish for selling, and the ability to pay for transportation to the market. By being forced to sell their jewellery, the women are exposed to prolonged poverty as they have no financial security to fall

67 Ibid.: 1-2

68 Kumar, A., et al., 2003, Dastagiri, M. B. and Mruthyunjaya, 2003, Katiha, P. K., et al., 2003

69 FAO, 2015, Katiha, P. K., et al., 2003, Bhatta, R., 2003

70 Kumar, A., et al., 2003: 15

71 Katiha, P. K., et al., 2003, Bhatta, R., 2003, Peke, S., 2012

72 FAO, 2015: 1

73 One of Mumbai’s original ethnic groups, traditionally referred to as fisher folk. There are also groups engaged in agriculture, salt-pan work and labour. (Peke, S., 2012: 8) Fish vendors from other castes are not covered by the report and are thereby not presented further here.

74 Ibid.: 1.

75 Ibid. The report is not primarily a report on gender and fisheries. Instead it is a report studying the challenges of women fish vendors in Mumbai. The case presented here thereby focuses mostly on the situation of women.

back on. In a comment on a draft version of this report, the International Collective in Support of Fishworkers (ICSF) says women mainly rely on informal loans while “Loans through cooperatives to women is very rare on contrary men get all the loans and subsidies through fisheries cooperatives for their fish harvest activities”.

Nowadays, the fish is often collected and transported to the city markets by the big fishing companies, preventing the women from competing. Furthermore, many men have organised themselves into cooperatives. One of the oldest co-operatives in Maharashtra (the state in which Mumbai is located) is the Satpati Fishermen’s Sarvodaya Sahakari Society, founded in 1944 by Narayanan Dandekar. The society has a total of 3,650 members, of which 450 are women. Due to male dominance, the women only have access to cold storage and subsidised ice (nearly 10 kg, but in case of scarcity boat owners get priority).⁷⁶ Why so few women have access to the cooperatives and their services is explained by Peke (2012) as being partly a result of women’s lack of time to get actively involved owing to their double burden as workers and care-givers, partly a consequence of prejudice as expressed in an oral statement about a co-operative society refusing to accept women as members since “you women quarrel”.⁷⁷ This has given the men access to stronger finances and political structures, which, in turn, enables them to influence prices and other means at the fish market. At the same time they are able to shut the women out from these arenas where they have no or small access.

The women in Maharashtra have, with the help of men, begun to form their own co-operatives, but they are not as established and so far their organisation needs strengthening. As women mainly work in relation to the fish markets they are directly exposed to market fluctuations – a matter they have no control over. On days when market prices are too high the women have little or no fish to sell at the market. This has an immediate impact on household income, resulting in days with no or little money. Finally, as many women are only seen as working within the post-

harvest sector, they are not represented nor consulted in infrastructure planning and decision-making processes related to landing development or other issues related to fisheries. This is likely to further reduce their access to the fish in the future.

Another process affecting household income is urbanisation. Recent city expansions have gradually changed the natural resources along the Mumbai coastline with lost mangrove ecosystems and waterways and polluted coastal waters with less access to land and resources. Sometimes the public in Mumbai has even been informed by authorities not to eat fish, crabs or shellfish from these areas due to high water pollution levels from industrial waste and oil spills.

The problem with pollution has a direct impact on the women fish vendors resulting in less or no income leaving the household exposed to negative health impacts, malnutrition, and no money for paying bills and other essentials. The author also points out the fact that polluted coastal areas imply less land for drying fish and no or little access to clean water to wash fish.

Despite women comprising almost half of the people connected to the fisheries in Mumbai, national government policies and development programs tend to focus on the problems, needs and interests of men. Women’s participation in decision-making processes within communities, fisheries organisations, and governments is lagging behind which has resulted in a neglect of women’s interest. There are several vendors’ associations in Mumbai that are dominated by men while there are no women’s organisations. The illiteracy level among the women is high leaving them with little or no access to information and thus with less capacity to implement strategies to improve their situation.

Parallel with this women perform the traditional domestic work within their households as well as organising labour, food, and money for the men’s fishing trips. This has not only put the women in a subordinated and exploited position implying double work burdens and prolonged workdays. Stakeholders and decision-making bodies do also generally not recognise them as fish workers resulting in a lack of registration or licenses. This leads to little

⁷⁶ Shah, D., n.d.: 35

⁷⁷ Peke, S., 2012: 35

acknowledgment of their problems and them being nearly invisible in different processes related to fisheries.

The Brihanmumbai Municipal Corporation (BMC) took over the markets in Mumbai around 1956, implementing daily fees (later an annual fee) to obtain licenses to access the market. The implementation of licenses was made as an attempt to formalise the market structure and to maintain the facilities and cover renovation costs. For the fee the vendors were promised sanitation, electricity, and access to clean water as well as a vending place inside the market. BMC does provide the facilities partly (i.e. some markets are still lacking basic facilities), but maintenance of the same is poor, and women have found the facilities to be unsuitable for their needs.

Up until 2006, when the first *koli* woman got a formal license, the women refused the licenses, working in the same spaces at the same markets as their mothers and grandmothers did, as they considered themselves as market founders:

Since historical times, fish selling has been entrusted to the fisherwomen. Earlier, they used to sell in groups in busy areas, and, over time, they built their own markets with their money in an informal way.⁷⁸

In addition, they have no means to pay the fees with the result that they are pushed further away from political and public spaces. Nonetheless, they still sell their products, thus performing informal work in structured and unstructured (unregulated) markets. The women fish vendors now sell their fish outside, under market roofs or umbrellas among garbage and disposed water, not only risking their health by being exposed to waste, monsoonal rains, heat, and violence but also to be forced away by authorities.

The above illustrates that the relationship between gender and fisheries in Mumbai is multifaceted and covers all aspects of the analytical framework presented in section 2 above. In this case both informal and formal structures and constraints such as traditions, the caste system, and market regulations are relevant and come with implications of less access to a range of resources such as natural (fish, clean water), financial, human (health), and social (networks, women's organisations). The women fish vendors are not only dependent on the natural resources they have lost control over and access to, they are also exposed to double workloads and negative health impacts, and excluded from several political and public spaces. Subsequently, this influences their capacity to affect not only their own lives and livelihoods but also the lives of other household members. The environmental aspects of fisheries is not discussed by Peke (2012). However, considering the small scale of their activities, it is not a farfetched assumption that the *koli* women (or men) are not among those affecting the marine environment, nor other environmental aspects, the worst, even though they are actors in the value chain of the fisheries. A degradation of the marine environment, both in terms of pollution and reduced fish stocks, and how it affects the small-scale market activities of the *koli* should also be evident, with an increased risk of poverty as well as food insecurity coming in its wake.

⁷⁸ S. Bhoir of Maharashtra Macchimar Kruti Samitee in *ibid.*: 16

6 Climate change



VICTOR ASTROM

Research shows that women and men often use, are affected by, or benefit from energy services differently. A gendered perspective is often absent in current formulation and implementation of energy policy. The picture is from an urban area in Nairobi, Kenya.

Anthropogenic greenhouse gas emissions causing climate change is a global problem affecting temperatures and precipitation, leading to fast and slow onset hazards – hurricanes, floods, cold and heat waves, drought, soil erosion, and sea level rise. Due to nature's, people's, and societies' vulnerability to such hazards, climate change is also affecting natural systems as well as livelihood opportunities through its impact on productive sectors, infrastructure and natural resources. In the worst-case

scenario it causes disasters⁷⁹ leading to a direct loss of lives. Although people living in poverty have contributed the least to the greenhouse gas emissions that are causing climate change, they are often the ones experiencing the worst impacts. They are both more exposed (many poor people live in the areas most affected by climate change) and have lower capacity to cope with and adapt to climate change due to their limited resources and lack of choice and voice. Vulnerability does not only differ between poor and affluent

⁷⁹ There is a difference between a hazard and a disaster – the first is the event itself (e.g. a drought or flood) while the latter is the outcome of a hazard striking a vulnerable natural or human system.

people, it is also commonly gender differentiated.

Numerous studies have pointed to the fact that the roles and responsibilities of women and men, the differential access to and control over resources, and differences in participation in various decision-making processes cause differentiated impacts and capacities. For example, women who farm are often active within labour intensive subsistence agriculture and the informal sector while men are involved to a larger extent in mechanised, large-scale agriculture.⁸⁰ Both subsistence agriculture and the informal sector are disproportionately affected by climate change – agriculture because it is directly dependent on a predictable and beneficial climate, the informal sector because its activities often take place outside and lack communication and transportation.⁸¹ A persistent increase in women's work load and time spent on, for example water, fodder, and fire wood collection – tasks that are often women's responsibilities – and increasingly deteriorating work conditions are highlighted in research as being among the most common consequences of the decline in natural resources that comes with climate change.⁸² In a drought in India women and children were reported spending between six and eight hours per day fetching water.⁸³ In Tanzania's countryside women in certain areas walk 5-10 km per day to collect and carry, on average, 20-38 kg of fire wood.⁸⁴

Women also experience an especially high risk of being killed by hazards. For example, in the European heat wave of 2003 more elderly women died than men, 90% of the 140,000 deaths after the cyclones in Bangladesh in 1991 were women, and when hurricane Katrina struck New Orleans in 2005 primarily African-American women with children lacked the capacity to escape. The picture is not unambiguous, however. The opposite can also happen, such as when hurricane Mitch struck Central America in 1998, when notions of masculinity resulted in more men dying because they were outdoors more, participated in more

high-risk activities (such as rescue operations), and implemented fewer safety measures.⁸⁵

A switch from fossil to renewable energy sources is central in the struggle against climate change. A major part of the Brazilian government's strategy to reduce the country's greenhouse gas emissions is to expand its electricity generation capacity based on new large-scale hydropower. Yet, as Mundubat (n.d.) shows, the construction of dams in the Brazilian Amazonas is not without problems for the environment or for people. It has affected ecosystems extensively due to the changes in water masses and courses, and has caused widespread deforestation (itself a contributing factor to climate change). As a result, floods, landslides, soil erosion, and climate effects, local as well as global, and many other adverse impacts occur. Large-scale hydropower dams also cause more or less extensive emissions of methane, which is a highly powerful, although relative to carbon dioxide more short lived, greenhouse gas. Local populations living and sustaining themselves in the areas where these changes take place are heavily affected. They lose their agricultural lands, livelihoods based on fish are disabled, and they are forced to move to areas without sanitation facilities, electricity, or other infrastructure (for transport, communication, health, or schooling) as well as to land that is unproductive requiring large amounts of fertilizers.

Women often belong to those worst affected by the construction of dams in Brazil. This is a consequence of patriarchal norms, which imply that women are not owners (of land, houses, businesses etc.) and, thus, are not recognised as affected. The opportunities for being relocated and compensated for losses are therefore often not within their reach, which makes them dependent on their partners. This reinforces gender inequalities and women's disadvantaged position in Brazil. In the following section a case of gender differentiated linkages to climate change and energy is presented. It is based on Newmarch (2011) and illustrates, as in the example of dams in Brazil, how women

80 Röhr, U., 2007, Brody, A., et al., 2008, Dankelman, I. and W. Jansen, 2010

81 Denton, F., 2002, Lambrou, Y. and G. Piana, 2005, Dankelman, I., 2010a

82 UNDP, 2007, Denton, F., 2002, Goldsworthy, H., 2009

83 Gupta, K. S. and M. Gupta, 2003

84 UNDP, 2007: 452011</access-date></record></Cite></EndNote>

85 Correia, M., 2001, Aguilar, L., et al., 2007, Brody, A., et al., 2008, UNDP, 2009

have less capacity to affect their situation due to gendered norms which govern the division of labour and access to resources.

6.1 Gender, energy, and climate change in South Africa

The Southern Africa region experiences recurring wet and dry phases with associated droughts and floods. Their occurrence appears to be influenced by climate related events such as the El Niño/Southern Oscillation (ENSO). These events are likely to continue since scenarios of climate change in South Africa predict an increase in temperatures between 1°C and 3°C across South Africa over the next three to five decades. Even if the scenarios for rainfall are more uncertain, IPCC predicts that winters will become drier and shorter, droughts will become more frequent, and summers will experience more rain concentrated in short periods with floods as a probable consequence.⁸⁶

Soil erosion, water availability, food security, health effects, agricultural production, forestry, biodiversity, ecosystem services, rural livelihoods are already affected or likely to become affected by current and projected climate change consequences in precipitation and temperature.⁸⁷ Furthermore, climate change affects the urban environment, resulting in water scarcity, fire risk, and flooding in cities such as Cape Town. The water scarcity is partly a direct effect of a drier climate, partly an indirect effect of a growing water demand in the agricultural sector as well as for domestic use.⁸⁸

South Africa is not only affected by climate change, however, it also contributes to it⁸⁹. Its energy sector is responsible for over 80% of the emissions, and thus plays a significant role in efforts to reduce climate change. At the same time, almost a fifth of the country's households lack access to electricity and among those who do have access many cannot afford to use it for their main energy

requirements – cooking and heating. A quarter of South Africa's households are therefore still dependent on biomass that pollutes the indoor environment for their most basic energy needs.⁹⁰ With climate change and its consequences for the environment, the access to this source of energy has been affected. Clearly, poorer households face a more difficult situation. More than half of the poor in South Africa are women, and 60% of female-headed households are poor, in comparison to 31% of male-headed households. Women are, furthermore, the ones to provide about 75% of the unpaid labour.⁹¹

All of the above mentioned impacts and sectors could be looked at from a gender perspective. Jocelyn Newmarch looks at the impact of climate change on the accessibility of fuel wood and its implications for the welfare of women in her report on gender, energy, and climate change in South Africa:

Access to energy is central to reducing poverty and hunger, improving health, increasing literacy, supporting small business development and income generation and improving the lives of women and children. If ordinary women find it difficult to gain access to energy, they are likely to be poorer with greater drudgery in the home. In turn, this impacts the entire country, as these women are less economically active with less time to earn an income, and fewer ways to spend the money they do have.⁹²

It is noticeable in her report that the linkages between gender, energy, and climate change cannot be ignored in the case of South Africa (just as they can't be ignored in any other part of the world). The gender division of labour is, by Newmarch (2011), identified as part of the explanation of the linkages. Similar to other locations, social norms place women in the home in South Africa, responsible for reproductive tasks, including cooking and heating water for

⁸⁶ Midgley, G. F., et al., 2007, Babugura, A., 2010

⁸⁷ Ziervogel, G. and A. Taylor, 2008, Babugura, A., 2010

⁸⁸ Midgley, G. F., et al., 2007, Ziervogel, G., et al., 2010

⁸⁹ It is the world's 12th largest emitter of CO₂ emissions. Still, this only constitutes 1,4% of total emissions. World Bank, 2014: 49

⁹⁰ Newmarch, J., 2011: 38 & 40, Statistics South Africa, 2012: 63

⁹¹ Newmarch, J., 2011: 9 & 13

⁹² Ibid.: 3

household consumption. These responsibilities require them to be the family's energy managers, in urban as well as in rural settings. As a result of gender differences in money and decision-making power women are energy poor, i.e. they use inferior fuels, such as firewood and paraffin, while men use batteries. Women thus have to go out to collect fuel wood – a task that is both time consuming and heavy (up to four trips are made per week collecting fuel wood loads that weigh up to 35 kg. In addition, several hours per day are spent on fetching water⁹³).

The time spent to provide the household with energy has increased further with climate change and its impacts on the availability of fuel wood. Women have also experienced several negative effects on their health, both as a result of the heavy carrying of water and fuel wood (back, neck, and head pain, and even childbearing complications), but also due to the smoke from the polluting fuels they use while cooking. Promotion of energy efficiency and other fuels in homes, as well as gender equality, could therefore have particular benefits for women. If done in a way that focuses on mitigation of climate impacts, this could be beneficial for the climate as well since women commonly are the ones with the responsibility for household energy consumption.

The case of energy, climate change, and gender in South Africa includes several of the aspects in the analytical framework. It illustrates the role of informal norms and constraints to differences in the linkages between climate change and gender through their consequences on the division of labour and decision-making power. In

combination with the women being primarily responsible for reproductive tasks, performed within the private sphere, they have less access to fewer financial resources and thus also less capacity to choose freely when it comes to what energy source they are going to use. Hence, they are referred to inferior fuels than men, leaving them vulnerable to climate change impacts on natural resources as well as health impacts from a heavy workload and indoor pollution.

The case also shows the importance of considering the social impacts not only of climate change, but also of policies (formal constraints). Newmarch (2011: 20) expresses this in relation to energy policy specifically:

Given the massive gender inequalities South Africa already faces, a gender-blind policy is in fact negative for women, entrenching an already unequal status quo.

Considering the gender division of labour and what it means for the access to, and control over, resources and thus to the capacity to implement strategies affecting one's own situation or the environment⁹⁴ is a necessary first step to avoid the "lip service paid to gender"⁹⁵ in most policies analysed by Newmarch (2011). However, to be able to address the unequal gender relations in the society there is also a need to analyse what structures, cultural or political, lay behind such gender differences.

93 Ibid.: 12

94 See Segnestam, L, 2009, for an analysis of the consequences of gender differentiated access to and control over different resources for what capacity one has to implement strategies to reduce one's own vulnerability to climate change.

95 Newmarch, J., 2011: 41.

7 Chemicals



ANDREAS FREYDNIK

Boys in India who work with recycling of copper from computer circuit boards. They dissolve the circuit boards in aqua regia (a mixture of nitric acid and hydrochloric acid). When the circuit boards are dissolved the dangerous gas nitrosyl is formed.

Chemicals are an integral part of human societies and are used in all sectors. There are significant benefits of chemicals to society, but there are also risks of negative impacts on health and the environment from the production, use and disposal of chemicals if not adequately managed.⁹⁶ The impacts include unwanted effects on ecosystems and the services they provide and direct human health effects such as cancer, allergies and neurological effects.⁹⁷ Apart from human suffering and ecosystem damage, these negative impacts also result in substantial economic costs to societies.⁹⁸

At the individual level, the use of chemicals varies with the socioeconomic situation of the household, as does the exposure patterns. Poverty is a risk factor for exposure to hazardous chemicals and improved chemicals management can be a driver of development.⁹⁹ Men and women are exposed to different chemicals depending on their livelihood situation and other gender differentiated aspects of life, for instance use of cosmetics and household chemicals.¹⁰⁰

Some occupational settings include exposure to hazardous substances with inadequate safety precautions. In addition, the division of labour between men and women

96 UNEP, 2012a

97 Persson, L, et al., 2010, Persson, L, et al., 2010, Prüss-Ustün, A., et al., 2011

98 UNEP, 2013

99 Massey, R., 2005, Goldmann, L. and N. Tran, 2002

100 UNDP, 2011

causes differential exposure. Small-scale mining is one example of activities with serious exposure to hazardous substances where men and women play different roles (see e.g. the case on small-scale gold mining in the Philippines below).¹⁰¹ In agriculture there is exposure to pesticides during preparation, application and cleaning of equipment. Depending on the crop and the cultural setting it may be either men or women who mostly apply pesticides. Pesticides are also often stored in the living quarters of households which may expose all family members at home.¹⁰²

While men may be over represented in some types of industries such as wood and metal workshops, predominantly women work in others, such as the textile industry. Certain activities with high exposure may also be carried out by especially young people, such as for example illegal street selling of pesticides in South Africa.¹⁰³

Not only exposure patterns to hazardous substances but also the health consequences vary between men and women. This is one of the cases where biological factors such as size and hormonal and enzymatic differences between men and women and between children and adults matter, resulting in different vulnerability and health outcomes (see section 2 for a brief introduction of the distinction between biological and socially constructed, i.e. gender, differences between men and women).¹⁰⁴

Having adequate information (i.e. a type of human resource) about the chemicals that are used and their potential effects on health and the environment is not a sufficient component for safe chemical handling, but it is necessary as a part of the solution. Currently adequate information is often missing or given in a language that the user cannot read. Sometimes women and men have different information about the chemicals they are using and sometimes even access it from different sources.¹⁰⁵

Achieving sound management of chemicals requires that the significant linkages between chemicals and gender are taken into account when formulating policies and programs.¹⁰⁶

7.1 Women's situation and role in small-scale gold mining communities, Philippines

The mining sector generally has large environmental impact on water, land, and air – “mining and the environment occupy contested terrain”¹⁰⁷. Among the impacts are a loss of habitat for wildlife and fish, fresh as well as sea water contamination (water contamination from mining, from the metals as well as mercury and cyanide, has been identified as “one of the top three ecological security threats in the world”¹⁰⁸), sedimentation and soil erosion, toxins in tailings dams, deforestation, loss of agriculturally productive areas and of biodiversity, and displacement of inhabitants.¹⁰⁹ The mining in the Philippines is no exception having caused “massive social and environmental problems (...) historically”¹¹⁰. It is a country with rich biodiversity (it is one of the world's richest countries with regard to the number of species – 8,000 plant species and 170,000 animal species, many which are found nowhere else). Deforestation and pollution, caused by the mining sector, are threatening this, however. This includes marine environments since many mining sites are located close to the sea. Human health is also at risk, and reports of skin rashes as a result of having handled water (washing or in rice fields) as well as food poisoning due to high levels of toxins that get into the food chain can be found. Finally, there is a link to natural hazards that are common in the Philippines. The deforestation has led to increased flooding and landslides, and a majority of the mining sites are in areas exposed to earthquakes.¹¹¹ This risks resulting in disastrous consequences, such as in 1996 when 3-4 million tons of

101 Dinye, R. D. and M. O. Erdiaw-Kwasie, 20122015</access-date></record></Cite></EndNote>

102 Chung, K., 2008

103 Rother, H.-A., 2010

104 UNDP, 2011

105 Ackley, M., 2008

106 UNDP, 2011

107 Burke, G., 2006: 225

108 Coumans, C., 2002: 1

109 Burke, G., 2006, Ingelson, A., et al., 2009

110 Doyle, C., et al., 2007: 1

111 Ibid., Ingelson, A., et al., 2009

metal enriched and acid-generating tailings filled the Boac River causing severe damages to the environment as well as to people.¹¹²

In spite of the high environmental and social risks associated with mining, the Government of the Philippines has been promoting the activity, potentially opening up as much as 30% of its area for the industry.¹¹³ According to Doyle et al. (2007: iii) these plans “will undermine the Government’s own strategy for sustainable development by destroying or severely damaging critical eco-systems, including watersheds, rivers, marine eco-systems and important agricultural production areas.” Still, in 2001 nearly 200 000 of the population was directly or indirectly employed by the small-scale mining sector or relied on it for their livelihood in the Philippines.¹¹⁴ Out of those it has been estimated that 25% were women.¹¹⁵

The case presented here is based on Pavo (2014) as well as a draft version of the same¹¹⁶, who looks at women’s role in two Artisanal Small-Scale Gold Mining (ASGM) communities in the Philippines. The two sites differ from each other not only geographically but also socially. The Ga-ang mine is located in a remote and mountainous area, populated by the Banao indigenous community, in Balbalasang-Balbalan national park on the main island. The mines are privately owned. The other community is the less remote and densely populated Jose Panganiban on the east coast. Mining is seen as a quick way to make money for a period in life. Hence, there is a large inflow of migrants from surrounding villages, which are influencing village life culturally and socially. Jose Panganiban is a permanent settlement “with large-scale and small-scale gold mining as the primal economic interest”¹¹⁷ in this area. It is extensively exploited and hosts many large-scale mining companies and foreign investors, although there are also non-registered and therefore technically illegal small-scale gold mining

activities ongoing. As opposed to the Ga-ang, where a ban on the use of mercury in the mines was implemented in 2012, in this area they still use mercury in the extraction process, which leads to significant health effects (see below). In the Asia Pacific region, the informal small-scale artisanal mining operations are much more difficult to manage from an environmental perspective than larger sized operations, partly due to their scope, practices, and impacts being difficult to quantify and account for.¹¹⁸ Still, the large industries have a greater environmental impact due to, for example, the amounts of chemicals and land used, and gold smelted.

Everyday life, including gender dynamics, is in both areas influenced by cultural heritage and widespread superstition and the miners are said to claim the mine is both a blessing and a curse. Economic approaches in mining are often compared to gambling, a prerogative of males. There is a constant search for gold and long periods without discoveries, which in turn results in insecure incomes and periods of poverty.

In Ga-ang most of the male miners are organised in groups with a leader who decides the day’s work, whilst in Jose Panganiban they are organised into corporations. In the latter case, how to divide the proceeds from the gold ores is either agreed in advance or shared equally within the group. The women are excluded both from the mines and the groups and thereby they do not have any access to regularly paid work at the mines (an example of how an informal constraint has an effect on the access to resources, in this case financial). In Jose Panganiban the share system and international investors, who rarely employ women, owning many tunnels prevent women from being involved in the mining practice. Exceptions are the women that work within the mining companies as administrative staff or cooks in Jose Panganiban. Many women in both sites are instead individually collecting discarded stones or sand outside the mine for further processing by hand before using sluice boxes and or panning. Many are offered stones or sand

112 Coumans, C. and MACEC, 2002

113 Doyle, C., et al., 2007: 1

114 Bugnosen, E., 2001: 3

115 Hinton, J. J., et al., 2003: 6

116 The name of the draft version is Women’s role in small-scale gold mining communities and was provided by the SSNC to be included in this report.

117 Pavo, R. R., 2014: 13

118 Burke, G., 2006

in exchange for food. The women have to collaborate as they are dependent on the income they get from the panning. The women have to ask for permission from the miners if they can pick up discarded stones, which are paid for by other services or objects (washing, cigarettes, or cooking). The competition for the stones is harsh amongst the women and is described as “like dogs waiting for the stones to be thrown”¹¹⁹. The women work independently but may ask the men for help (carrying heavy stones) as a favour.

A few women are also involved in informal mining corporations outside the companies’ terrain. Other women, not directly involved in the mining, are running small convenience stores and other businesses (cooking and washing) at the mine site, or gold-buying stations, thus contributing to the household economy. At both sites activities for income diversification and remuneration are introduced to the women, although the associations’ presence is stronger in Ga-ang.

In Ga-ang men claim that having women work in the mine will not only curse the mine but also the gold ore and the men working inside. Furthermore, keeping the women out of the mine is commonly justified with mining being heavy and dangerous. This has the effect of barring women from having a secure income, which makes the household dependent on one single financial source, the husband’s income.

Prior to the ban of mercury in 2012 it was commonly used to rid the ore of impurities (mercury extracts the gold from the ore by forming amalgam¹²⁰). In the 1990s about 26 tons of mercury were being discharged per year into the rivers in the southern Philippines.¹²¹ In the draft version of Pavo (2014) the women are said not to have not been introduced to the Benguet method¹²², an alternative panning process that does not involve mercury, and a majority of them are therefore still using it, illegally, in the panning. They are

thereby exposed to several health impacts, which can negatively affect household income, family well-being and children’s education. The most common health impacts among ASGM-workers are neurological, including tremor, memory problems, and vision disorder, but in the Philippine cases skin rashes, stomach pains, and recurring headaches were also reported. The smelting of raw gold additionally pollutes the air, resulting in respiratory illnesses. This is a much bigger problem in the Jose Panganiban area due to the prevalence of large-scale mining industries.¹²³

Contrary to Ga-ang, both men and women in Jose Panganiban use mercury heavily in mining practices, which increases the households’ general vulnerability since also the husband – the primary income holder – is exposed. According to the draft version of Pavo (2014) the poverty rate is so high that it prevents the households from buying insurance and medical treatment. The use of mercury, furthermore, contaminates nearby water streams. The population is aware of the toxicity of chemicals but perceives they cannot afford to prioritise their health by using other practices than mercury. Due to poor soils agriculture is not an option and they are thus entirely dependent on mining income. The few involved in subsistence farming as well as seasonal work at the nearby coconut plantation are women. Working in agriculture and panning doubly exposes the women to mercury poisoning.

The culture is highly patriarchal and the men in the communities have decision-making power not only within the household but also in the community. Nevertheless, the women are more likely to be in charge of the household economy (even though it is the man who has the income, making the women, as well as the households at large, dependent on them) and decisions concerning the children’s future and schooling.

Despite the patriarchal culture women within the Ga-Ang community can through hard work and initiative reach independence and may also stand for public elections. A door for political empowerment is thereby opened enabling

119 Female interviewee quoted on p. 13 in the draft version of Pavo, R. R., 2014

120 Gibb, H. and K. G. O’Leary, 2014: 3

121 Burke, G., 2006

122 The Benguet method uses borax (sodium tetraborate) instead of mercury, thus reducing the toxicity of the panning process. It furthermore improves the capture as well as the quality of gold. Gutierrez, R., 2013

123 Gibb, H. and K. G. O’Leary, 2014: 8, Pavo, R. R., 2014

women to get involved in local decision-making processes. Nevertheless, the men perceive themselves as having more decision-making power – “Males always have the last word”¹²⁴. In Jose Panganiban it seems like women are excluded completely.

In summary, the case of women and gold mining in the Philippines shows how the culture, i.e. what is called informal constraints in the analytical framework in section 2, in the mining sites in the Philippines that Pavo (2014) compares has led to a division of labour where the women have little or no access to employment and a secure income. Due to the gender division of labour in combination with a lack of knowledge about alternative, less toxic techniques for panning, women are, in addition, more exposed to

mercury – a highly toxic pollutant – giving them poorer health with impacts on their own as well as their families’ well-being. In Jose Panganiban, women’s disadvantageous situation is clear. Their agency is even more limited than the one in Ga-ang since they lack economic alternatives, making them dependent on their husbands’ incomes. The case of gold mining thereby illustrates the linkages between environment and gender, moving from cultural aspects via the division of labour to an inequality in financial and human (knowledge and health) resources as well as in decision-making power. Still, the same gendered culture and division of labour implies that men are the ones affecting the environment the most since they are the ones active within the large-scale mining industry.

124 Male interviewee quoted on p. 21 in the draft version of Pavo, R. R., 2014

8 Summary of lessons learned from the cases

The cases presented above touch upon several of the aspects in the analytical framework presented in section 2 (formal and informal constraints, division of labour, and access to as well as control over resources), but to a varying degree. All of them touch upon the importance of including informal constraints, such as traditions, norms, value systems, and superstition in the analysis since they quite often are more influential than formal constraints when it comes to gender inequality as well as differentiated linkages to the environment. This proves the need to perform context specific, place-based analyses since informal constraints can, to a larger degree than formal constraints, be highly local and even differ from one local culture to the next (e.g. traditions and norms within indigenous populations may differ from those of non-indigenous populations). This is not to say that formal constraints should be ignored. They can also be of great importance, especially when it comes to the access to and control over resources (e.g. regulations for what resources can be used as collateral for credits, or laws governing property rights or inheritance).

The cases describe women's roles and situations and a focus on the division of labour is apparent in all six cases. The emphasis is on what the women do, mentioning the roles and responsibilities of men but in far less detail. This is consistent with other studies on gender and environmental aspects that wish to give visibility to the otherwise often ignored roles, positions, and needs of women. All cases present a similar division of labour, where women are solely responsible for the reproductive tasks in the private sphere as well as being involved in different productive sectors. As a consequence they commonly face double work burdens, and work burdens that often become heavier with environmental degradation and climate change. Several of the cases also witness to the women having little access to enumerated work opportunities or being paid less for the work they perform, putting them in a situation of less capacity to implement strategies to better cope with a deteriorating environment. Considering the gender differentiated roles that are reported on, one is furthermore left to believe that women, in general, exert less pressure on

the environment than the men, who more commonly are involved in large scale, more industrial activities than the women. This would also be consistent with the findings of other research on gender and environment.

Other common features include decision-making power being in the hands of men, independently of whether the arena is the household or in society at large, men controlling financial resources even if there are cases where women take part of the economic planning of the households, and women having less access to good quality natural resources (e.g. they have to settle for the stones that male miners discard). In general, women have less access to, as well as control over, all types of resources mentioned in the Introduction (financial, natural, physical, human, and social). This has consequences for what activities men and women have the capacity to implement. Hence women in most of the cases have less capacity to affect their lives and livelihoods, such as in the case of energy and climate change in South Africa where the women did not have the financial means to choose what energy source to use, rendering them more vulnerable to the impacts of climate change on natural resources as well as of indoor pollution. To strive for gender equality in all aspects and contexts where women are less visible, and to do that hand-in-hand with efforts that have as their objective to improve the state of environment, is therefore key, not only for women but also for sustainable development and a healthy environment.

The cases also show that environmental degradation affects women and men differently. One of the main explanatory factors behind this is the division of labour and assets which put women and men in different situations with regard to what they are exposed to and how. It furthermore affects their capacities to both cope with environmental degradation and adapt their situation to the context within which they find themselves. The opposite, i.e. that women and men have different impacts on the environment is less discussed in the reports, however. Perhaps as a result of a bias towards women and their situations, which in all of the cases prove to be worse than those of the men, discussions on capacities and strategies are poor, and in many cases

lacking. An exception to the picture painted by the other cases is that of organic farming in the Philippines. This is a case which shows that an increase in human resources, through training in sustainable farming practices, can change, for women, a negative spiral making both women and environment better off. Hence, a change in social norms relating to the division of labour will lead to women's introduction into a male dominated sphere – agriculture. But they did not only learn how to farm, they also learnt how to do it without agrochemicals or GMO seeds, thus changing the norm of how to farm. With the empowerment of the women, their access to and control over financial, natural (e.g. food), and social (the organic farming was collective) resources, enabling them to improve their lives and achieving a greater self-sufficiency without spending money on environmentally harmful chemicals.

Using the example of agriculture in Uganda, one can create an upward spiral depicting how the analytical categories, with concrete examples linked to them, interact shaping specific linkages between environment and gender. It becomes evident that without a proper understanding of (in this case informal) constraints it would not be possible to understand the gender-differentiated linkages. Finally, this is a case where the spiral could be 'extended' to look at what this all means for the capacity to implement strategies to reduce the negative impacts of climate change or some other environmental problem and for program planning in order to support such strategies.

9 Ways forward – gender sensitive programming

As illustrated by the cases reviewed for this paper, the strong connection between gender and environmental progress is surprisingly undiscovered, even by organisations working with natural resources at the local level. The two cases from the Philippines can be used as illustrations. The case of organic farming shows that by changing the division of labour and providing women with the knowledge of how to farm with fewer chemicals, their resources and independence increased while creating a basis for improvements in the state of environment. Instead, in the case of mining, the division of labour follows conventional patterns, with the men being active within large-scale and women in small-scale mining. Their respective roles leave women to be dependent and more affected by pollution, at the same time as the men's activities have greater adverse environmental effects. Due to women's usual role as natural resource users on a daily basis it is therefore important for natural resource management projects to overcome gender biases. Agarwal (2009, 2010) presents similar findings showing how more gender equal compositions of local forest management groups would lead to improved conservation and regeneration of forests. Her conclusions are based on the fact that differentiated interests, dependencies, and uses in relation to forests and their products would complement each other in the management of forests. The gender division of labour and economic resources are seen as the main causes for this differentiated relationship to the forests.

This can partly be attributed to the historically strong connection between gender equity and social justice.¹²⁵ For many years, efforts to redress gender imbalances have been seen as belonging to the general area of human rights and, as such, have tended to focus on legal aspects of gender equality. Early efforts to look at the practical aspects of gender imbalances resulted in the WID (Women in Development) approaches which, while providing temporary relief to individuals, did little to redress fundamental imbalances.¹²⁶

In the last decade or so, more focus has come to rest upon how gender imbalances affect economic development, moving from the obvious conclusion that discrimination results in lower incomes for individuals to the more complicated observations that economic inequality can drag down the economy as a whole and that discriminating against a large and important part of the labour force is *inefficient, not just unfair*.¹²⁷

It is high time that the global debate, and action on the ground, realised that these economic arguments apply to sustainable management of natural resources, pollution management, and adaptation to and mitigation of climate change. Indeed, in many countries, natural resource based sectors (agriculture, forestry, mining, aquaculture, tourism, etc.) are drivers of the macro-economy. Many cases have been observed where, for example, women contribute less than men to environmental degradation because they tend to focus on the household/local level, operate on a small scale, and have limited access to (often environmentally damaging) inputs such as pesticides.

The analysis in this report is based on the influence of social constructs, i.e. that neither the roles and responsibilities of men and women, nor their relationships with the environment are biologically given. Earlier essentialist (assuming biological or physiological causes to human behaviour) and universalist (seeing all women or all men as having the same, universal, characteristics) views on women and men are, thus, considered too far from the complexity of reality. In addition, analyses and studies of how women have a special relationship with nature (to be compared to men's relationship with culture) need to be widened to recognise:

- Men, not only women, in the analyses. A large share of literature on gender and environment is still, unfortunately, biased towards a discussion of women's situation, and men are therefore still relatively invisible

¹²⁵ Farnworth, C., et al., 2013

¹²⁶ See e.g. Rathgeber, E. M., 1990 and Razavi, S. and C. Miller, 1995 for more on WID and its successors WAD (Women and Development), and GAD (Gender and Development).

¹²⁷ FAO, 2011, World Bank, 2011

- Men and women as complex categories with at times similar needs rather than as heterogeneous categories with contrasting needs
- Gender categories that gain meaning not just through opposition to one another, but also with reference to a host of other social markers like age, income, and ethnicity
- Not only women (and men) being affected, but also affecting
- Environment-gender relations being embedded in and formed by dynamic cultural and political structures, which differ according to particular, place-based contexts.

At the same time, it is obviously important that a criticism against the more essentialist view of women being ‘closer to nature’ does not lead to a rise of gender-blind environment and development work.¹²⁸

By addressing gender imbalances in decision-making and access to resources as well as the causes of such imbalances, environmental organisations can address the drivers of environmental degradation and make women active participants in the struggle towards sustainable development. For instance, in the case study on agriculture in Uganda, it is noted that women by not being allowed to own land lack incentives to invest in long-term sustainable agricultural practices.

A number of different aspects should be considered when working on gender and environment.¹²⁹ Efforts to address gender imbalances should be an integral part of a larger package, not just a politically correct add-on. This may call for some **baseline studies of a local area identified for intervention in which the role of gender should be analysed for its specific impacts in that situation.** This

report has suggested a number of analytical categories or steps for a gender analysis to cover:

1. Analyse cultural/informal (e.g. social norms, traditions, and values) or political/formal (e.g. laws and regulations) constraints – are they equal in their ‘design’ or discriminating in some way?
2. What does the division of labour look like – are tasks and responsibilities for men and women different? Are they performed in different spheres (domestic or public)?
3. What implications do the constraints and division of labour have for the access to and control over resources – is access to resources equal in terms of both type, quantity, and quality? Is the power to make decisions over the resources equally distributed?

In addition to these three steps, one can use the results of the analysis to determine what capacities women and men have respectively to implement strategies necessary to reduce their vulnerability to environmental degradation, but also to reduce their own impact on the environment. For the results to be meaningful it is important that not only women are included but that the situation of men is covered in the same way. In a gender analysis including both men and women these questions become natural to highlight, and opportunities for change, or the best entry points for transformations, can then be looked at more extensively (see Segnestam (2014) for an example of how men’s access to and control over (i.e. the power to make decisions regarding resources) different resources enable them to adapt to a changing climate in the long-run compared to the women who find themselves in a situation of increasing vulnerability). This analysis can be very sophisticated or simply answer the question; ‘How will greater gender equity reinforce our activities on the ground?’

Efforts to redress gender imbalances should be as **potentially non-conflictive as possible.** Engagement with

¹²⁸ See e.g. Leach, M., 2007 for developments of this argument.

¹²⁹ CARE, 2010, Chipoya, D., 2013, Farnworth, C., et al., 2012, Farnworth, C. R. and N. Shiferaw, 2012, Green, D., 2012, Quisumbing, A. R. and L. Pandolfelli, 2010, Saito, K. A., et al., 1994

men and women in local organisations, traditional hierarchies, and cultural/religious organisations is important so that those affected will be aware that such efforts are not a threat and that most will benefit. Interventions may need to be adapted to reflect a greater harmony with the local culture. This is not to say that new ideas cannot be implemented, merely that conflict is an impediment to lasting change. It could be helpful, as is done in the Moser Framework, to characterise gender planning as a ‘debate’ and iterative process to be able to achieve transformation.¹³⁰

Local action is **more effective where there are structures/organisations which facilitate the use of grassroots knowledge**. Working to incorporate time-tested practices and local knowledge into more global and long-term strategies may be one way to ensure that a sense of ownership is created in local communities.

Efforts to address the practical problems of women (referred to above as WID) did not result in the long term and systemic changes which are necessary to promote economic development and sustainable resource use. **Individuals thus need to organise themselves in some way to press for change** and to be reached by larger programs and investments. These organisations can take many forms (self-help groups, youth groups, cooperatives, religious or cultural organisations).

Several organisations have begun to take the above steps, and developed guidelines for how to mainstream gender in practice in projects related to environmental issues in order to achieve a gender sensitive programming. A selection of these guidelines can be found in the lists of references and further readings below. These guides could be used by SSNC and their partner organisations as support in their own work, or as a basis for establishing their own set of guidelines for gender mainstreaming.

Based on the findings in this report and existing guidelines, such as the International Centre for Integrated Mountain Development’s guidelines for gender sensitive

programming¹³¹, the following steps forward for organisations like SSNC and their partner organisations may be considered in their programming:

- At the start of every initiative, conduct a gender analysis of the situation and the problem to address. Base the analysis on the components suggested above
- When defining project objective, outcomes, outputs, and activities, these should be defined with the aim to address the needs of both women and men in relation to the environmental problem addressed
- Actively look for methods that encourage the participation of women and men in the project planning and implementation.
- For project reporting and monitoring/evaluation, include gender sensitive indicators to measure how the project has affected women and men and their needs and the resulting impact on the environment.

¹³⁰ Ndungo, C., et al., 2010, Moser, C. O. N., 1993

¹³¹ Leduc, B. and F. Ahmad, 2009

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11 Further readings

11.1 Gender reports from SSNC partner organisations¹³²

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¹³² The following reports were provided, in addition to those on which the cases are based on, either by SSNC in meetings on those working with the five focus areas covered in this report either within the Thematic Departments or the Department for Global Coordination at SSNC's headquarters in Stockholm, or by the partner organisations themselves.

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