Session 6.1
Biodiversity, agriculture, fisheries: Changing economic opportunities for women and men

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Session 6.1. Biodiversity, agriculture, fisheries: changing economic opportunities for women and men

The agriculture, forestry and fisheries sectors are crucial to sustain human life, but they also exert pressure on ecosystems. Across much of the developing world, and among many indigenous communities, women depend more on marginal lands for farming, account for a large share of small-scale fishing and artisanal fish processing, and are largely responsible for collecting water and wild edible and medicinal plants from fields and forests. This makes them most sensitive to biodiversity loss, deforestation, land degradation and desertification. The degradation of ecosystems can especially harm women when compounded with discriminatory legislations and social norms and gendered segregation of economic activities. Women often lack a voice in the governance of large-scale farming, forestry, and fishing, though there are many initiatives led by women seeking to strengthen conservation and restauration efforts at the local level.

Ecosystems’ degradation and gender inequalities

The agriculture, forestry and fisheries sectors depend on healthy, well-functioning ecosystems (such as forests, grasslands, water, oceans) and the plant and animal life that inhabit them (OECD, 2018). An estimated 45% of the world’s population depends on these sectors for their livelihoods (CBD, 2017) and one in three workers globally are employed in agriculture (FAO, 2012; OECD, 2018).

While these sectors are crucial to sustain human life, they are often exploited with solely short-term economic considerations in mind, despite a strong economic and natural resources business case for greater conservation and sustainable use of biodiversity resources (OECD, 2019a). In opportunity costs values, biodiversity loss in Europe alone costs nearly USD 500 million per year (Carrington, 2018). Globally, the main human induced factors of biodiversity losses are overexploitation of natural resources, pollution and climate change. Mainstreaming biodiversity protection in the agriculture, forestry and fisheries sectors is vital to meet sustainable development objectives, but it is limited without a granulated production and consumption analysis, including gender and social considerations.

In developing countries, women more often than men are in charge of fetching water, gathering food from forests, harvesting small-scale and inland fisheries, and are heavily engaged in small-scale agriculture (Agarwal, 2018). Hence, the degradation of ecosystems can lead to greater gender inequalities and a rise in female poverty.

The impact of land degradation on women

The environmental damage and biodiversity loss caused by climate change and unsustainable farming practices, deforestation, mining, and other human activities causing land degradation impinge disproportionately on women. In developing countries and indigenous communities in many parts of the world, women’s role in ensuring water and fuel supplies, as well as collecting wild edible and medicinal plants makes them most
sensitive to deforestation, land degradation and desertification (OECD, 2019b). Environmental degradation can spoil or reduce clean water and ecosystem goods, forcing women to travel further to collect them for household use.

Women and indigenous groups living in deprived areas are especially affected by degradation of soil and reduced water supply, which has already reduced the productivity of nearly one quarter of the global land surface, further exacerbating poverty and hunger (IPBES, 2019). Heightened financial insecurity, caused by lost agricultural revenue, can worsen the plight of women and children. A 2016 UNICEF study in India found a correlation between a rise in abuses against women and children and droughts, such as rise in child labour and trafficking, women forced into prostitution and femicide due to increased difficulties in providing higher dowries to supplement lost income or inability to conceive due to malnourishment (UNICEF, 2016). The latest IUCN report found that climate change and subsequent stress on ecosystems from environmental degradation is increasing gender-based violence (Harvey, 2020).

Across low and middle income countries, women engaged in farming hold mainly small pieces of land and cultivate mostly traditional food for subsistence and sale, while men generally hold larger pieces of land and focus mainly on trade (World Bank, 2006). Women are also particularly affected by the destruction of ‘marginal’ land, which is often perceived as less important and less useful than agricultural land. Yet, marginal lands perform key subsistence functions and are of particular importance to women and indigenous peoples (CBD, 2008).

Not only are women vulnerable to environmental degradation due to their roles as home-managers, but also because of their role in reproduction. Environmental contaminants in water, air and soil – for instance by-products of the misuse of agricultural inputs like pesticides and fertilisers or dumping of toxic materials – can act as endocrine disruptors that impair women’s reproductive systems, harm the developing bodies of foetuses, or cause toxins to bio-accumulate in breast milk (Ogbuinya, 2014; Ervin, 2018).

Beyond the direct environmental effects, large-scale economic activity can also be accompanied by adverse social spill overs on women living in local communities. Extractive industries, in particular, offer a clearer picture of the way in which exploitation of natural resources affect women and men differently, both in terms of opportunity and risk. Global evidence shows that benefits of higher-paying jobs primarily go to men, while women disproportionately bear the social and environmental risks (World Bank, 2013). Numerous cases, documented in developing and developed countries alike, correlate an increase in violence against women as a social impact of extractive industries, driven in part by a transient predominantly male workforce, increase in substance abuse, and income disparity between sexes (Lim et al., 2018).

**Water scarcity and women**

Social norms in many countries are more likely to impose water management roles on women. For instance, a study carried out by the UN in 48 Sub-Saharan African and Asian countries found adult women and girls to be responsible for water collection more than twice as often as their male counterparts (UN 2010). Inequality in terms of water management was particularly high in rural Sub-Saharan Africa, where adult women fetch water in 63% of households compared to 11% of adult men (UN, 2010). Women who take on the responsibilities of household and family caretakers are often severely affected by inadequate access to water and sanitation.

According to UN Women, in a single day in 25 sub-Saharan African countries, women spend 16 million hours collecting water – often to the detriment of education or paid work – compared to only 6 million hours spent by men and 4 million hours spent by children (UN, 2016). Women’s health is also at risk due to the heavy work they are responsible for in collecting and carrying water which can lead to irreparable effects on their spines, deformations and diseases. Additionally, water collection requires 30% of daily calorie intake, thus putting women with poor nutritional intake at risk (OECD, 2019b). The growing scarcity of water is therefore affecting
women most in developing countries, as the degradation of the nearby water sources means they need to cover a larger distance to reach cleaner water sources.

**Fisheries and women**

Overfishing affects one third of global marine stocks (Delpeuch and Hutniczak, 2019). Women participate actively in the fisheries sector, constituting 47% of the global labour force based on existing data (Monfort, 2015). In Asia alone, women reportedly occupied 33% of aquaculture workforce in China, and 42% to 80% in freshwater and cage culture in Indonesia and Vietnam (OECD, 2015; Meryl et al. 2016).

A gendered division of labour is very pronounced in fisheries. Worldwide, men are mostly involved in fish and aquaculture harvesting, making up 81% in this sector in 2014 (FAO, 2018), while women are overwhelmingly involved in secondary fields such a fish processing, marketing and fishing machinery maintenance (90%), which are often low paid or unpaid seasonal jobs without labour rights protections (FAO, 2018; European Commission, 2002).

Half of global fish catches come from small-scale fisheries, which in turn occupy more than 90% of fishers worldwide. Women are directly affected by unsustainable fishing practices as they account for a large share of the millions of people who are involved in artisanal fish processing. In developing countries, women are more likely to be more engaged in fishery-related activities close to the household and, when women are directly engaged with fishing, they are likely to focus more on small catches of highly nutritious fish and other aquatic animals for immediate household consumption (FAO, 2018). However, the role of women in artisanal fishing is not sufficiently recognised and it is overlooked in statistical data collection (Biswas et al, 2018). Discrimination and lack of access to ownership of fishing equipment also hinders women’s ability to play a role in making fishing practices more sustainable.

**Women’s role in the preservation of ecosystems**

A 2018 report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystems found that the benefits of land restoration are ten times higher than the cost, and current rates of degradation undermine the well-being of at least 3.2 billion people (IPBES, 2018b).

Women in rural areas and indigenous peoples play an important role in the conservation and management of biodiversity. In developing countries, women often are key users and custodians of natural resources (TEEB, 2015). Their dependence on natural resources and surrounding environments to provide food, medicine, and fuel for their families serves as a strong incentive to preserve and protect those resources. As the trend of men exiting agriculture continues, the sector’s gradual feminisation, where women already constitute between 43-50+ percent of all farmworkers in Asia and Africa, leads to an increasingly important role placed on women (Agarwal, 2018).

**Land rights and conservation efforts**

Despite these important roles, women in many developing countries face restricted access to productive and financial resources and are marginalised when it comes to decisions about land tenure. Women’s limited ownership of land – driven in large part by discriminatory practices – reduces their capacity to change how land is used, hampering their ability to deal with environmental damage (OECD, 2019b). Land-ownership limitations due to discriminatory laws and practices or informal employment limit women’s decision-making participation in farming. Equal access to land rights could have positive effects in forestlands restoration and ecosystems sustainable management (FAO, 2018b).
Several cases show that giving more equal land-tenure rights to women and men, may bring about more environmentally sustainable outcomes. For example, Rwanda’s programme of land tenure regularisation (LTR) is a low-cost intervention to clarify land ownership and resources access in a war damaged country. The programme also affected social norms as it allowed for female land ownership and inheritance, in parallel to land-related investment. Legally married women (76% of married couples) saw an improvement in their land access rights (Nyoga, 2019). Women-headed households largely contributed to investment and maintenance of soil conservation measures, while overall no negative effect was recorded on vulnerable groups (Ali and Goldstein, 2014, Abbott and Roger, 2015).

Another example is Costa Rica’s Action Plan of the National Strategy on Climate Change, in which gender is being mainstreamed and women’s role is recognised as critical in the restoration of forestlands and ecosystems (UNFCCC, 2015). Costa Rica is introducing a gender approach to agroforestry systems, critical to boosting production systems that are low in carbon. By creating conservation units that unite several women-led farms, as they are smaller, the female producers have the opportunity to strengthen their capacity, while achieving lower emissions and maintaining a percentage of the plot with forest coverage.

The OECD’s Social Institutions and Gender Index (SIGI)1 findings show that even if a country’s laws provide for equal rights between men and women to own, use, and make decisions regarding land – discriminatory social institutions ensure that de facto rights are far from equal. Preference is still given to men in terms of inheritance of land, names on land titles, and decision-making power over land tenure, including in OECD countries. Laws governing inheritance in France, Israel, Greece, Mexico, Spain, Turkey, and the United Kingdom still contain discriminatory clauses that negatively affect women (OECD.stat, 2019). Globally and across countries, depending on a woman’s marital status, her rights may be even further restricted or nullified.

International development programmes also still quite often overlook gender aspects in their projects. As infrastructure and natural resource management projects at both local and national levels are often dominated by men. Women are often excluded from decision-making processes that will affect their ecosystems. For instance, the international REDD+ programme (Reducing Emissions from Deforestation and Forest Degradation) provides payments to developing countries in exchange for conserving them. In some cases the programmes did not include women in the governance framework (e.g. Nepal, Cameroon) and the resulting decisions overlooked the different needs of men and women (Elwell & Williams, 2016).

In OECD countries, discrimination may also be the result of gender-blind policies or measures. Iceland offers an interesting experience as it is considered a gender equality frontrunner and has been using gender mainstreaming and gender budgeting tools since 2009. Through gender budgeting, the government recently changed the conditions by which farmers received state funding affecting their pensions. Based on 2012 data, Iceland officials realised that, even though both men and women worked equally on the farm, only the men applied for the funding, as the system granted to only one farmer the right to register per farm (European Commission, 2019). By allowing two farmers to register per farm, both family members have now access to the state funding and, subsequently, to a pension. Nevertheless, even countries like Iceland need to reconsider their general farm support policies, given their environmental impact (OECD, 2019d).

On average only 21.35% of agricultural landholders are women in OECD countries, based on FAO data. In the EU, women in rural areas are almost half of the rural population, representing 45% of the economically active population (about 40% of them are formally occupied in their family farms, while informal employment is not documented) (European Parliament, 2019). In Central and Eastern Europe (non-EU), women outnumber men in rural areas, with the exception of 15-49 year olds, where the figures are reverse. They also appear to be more

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1 The OECD’s SIGI gender Index is a measure of discriminatory social institutions, which includes formal and informal laws, social norms and practices that restrict women and girls’ rights, as well as their access to empowerment opportunities and resources. There is a SIGI Simulator designed to allow policy makers to scope out reform options and assess their likely effects on gender equality in social institutions. See here: https://sim.oecd.org/Default.aspx?lang=En&ds=SIGI
dependent on gains from agricultural labour as in many occasions there is no clear distinction between their domestic and labour-related tasks (FAO, 2018b).

**Sustainable farming practices**

Women’s key role in promoting sustainable farming practices has been widely acknowledged, as women are more often are the ones responsible for covering food and health family needs. In developing countries, women are responsible for producing staple crops (such as rice, wheat and maize), which produce between 60% and 80% of food in most developing countries, and cover 90% of food intake in poor rural areas (FAO, 2011a; FAO, 2014; Menon et al, 2017). Women are also often in charge of the selection, improvement and adaptation of plant varieties when seed selection is done in situ, using criteria based on their genetic characteristics. Women safeguard and maintain seeds and germplasm to be used as planting material in smallholder agricultures. They choose to grow different crops than men, contributing to farm biodiversity and food security. In addition, in developing countries, women cover about 80% of the healthcare needs of their families, through traditional medicine, using a variety of plants.

The FAO estimates that enabling women to access productive resources to the same extent as men in the agricultural sector can increase yields on women’s farms by 20-30%, raise total agricultural output in developing countries by 2.5-4%, and reduce global hunger by 12-17% (FAO, 2011a). This would have knock-on effects of reducing poverty, and improving health, self-sufficiency, and food-security. The latter can also reduce the need for the transport and import of agricultural goods, thus the carbon footprint arising from food trade. Additionally, increased productivity in agriculture will also support the reduction of emissions, which represent a large percentage of the negative externalities associated with agriculture (Aragón & Rud, 2016).

**Biodiversity conservation and sustainable forest management**

The Convention on Biological Diversity (CBD) 12th meeting of the Conference of the Parties (CBD COP-12) recognised the importance of gender considerations to achieving the Aichi Biodiversity Targets, introduced a 2015-2020 Gender Action Plan, and called for more sex-disaggregated data and monitoring of policies introduced. The Gender Action Plan’s major objective is mainstreaming gender into implementing CBD, as well as promoting gender equality (CBD, 2014).

There are many examples on how engaging women can strengthen conservation efforts. A review of 17 studies that empowered women in local resource decision-making in the forestry and fisheries sectors (in non-OECD countries) found that the participation of women has a strong positive affect on resource governance and conservation outcomes (Leisher et al., 2016). In Namibia, which collects sex-disaggregated data through its Community-Based Natural Resources Management Programme, 2012 evidence shows that 30 per cent of conservancy management committee members were women, and that women were mainly involved in the management of indigenous plants (CBD, 2014).

The role of women in the management of commons requires much greater attention than has been the case up to now. The importance of this issue was at the core of the research of Elinor Ostrom, the first woman to win the Nobel Memorial Prize in Economics for her "analysis of economic governance, especially the commons" (Ostrom, 2015). She researched how humans interact with ecosystems to maintain long-term sustainable resource yields, developing institutional mechanisms to share the use, management and monitoring of commons, while avoiding ecosystem collapse. Her work emphasised the multifaceted nature of human-ecosystem interaction and argued against any singular solution for individual social-ecological system problems. Sustainable development requires a community-focus that empowers women and indigenous populations to participate and take on leadership positions (Quisumbing et al, 2014).
Sustainable water management

Women’s involvement in water management, due to their local natural resources knowledge and their skills from household water management, can be leveraged to shape conservation efforts through awareness-building campaigns (OECD, 2019b). However, on a broader scale, women play a marginalised role in water governance and have poor access to agricultural inputs and productive resources (e.g. irrigation, technology, credit) which can have implications for sustainable water management (Sadoff, Borgomeo and de Waal, 2017).

A 2006 study on water and sanitation projects conducted by the International Water and Sanitation Centre (IRC) across 15 countries, found that projects that ensured the full participation of women at all stages – were more sustainable and effective than those that did not (UNESCO, 2006). Evidence from 121 rural water supply projects studied by the World Bank show that the projects are 6 to 7 times more effective than others where women were involved (World Bank, 1995).

Women’s role in sustainable fishing practices and coastal protection

Multiple women empowerment projects in the fisheries sector have resulted in women pooling savings to fund ongoing projects and make fishing more sustainable. Women-led initiatives have also achieved a successful regeneration of mangroves in Kenya and other East African countries, protecting coastal areas and yielding more marine wildlife. Accounts of microfinance initiatives show that women prioritise business sustainability in the long term more than men, in turn leading to better protection of marine ecosystems (Stevenson et al, 2006). A recent UN Environment report has also highlighted the role of women-led initiatives to clean up and protect coastal areas, including via mangrove regeneration, in parts of India, Mexico and the Philippines (UN Environment, 2019).

A 2019 IUCN report highlighted the need for more evidence on the interlinkage between women’s empowerment, access to finance and sustainable fisheries, based on past and ongoing pilot projects in Ghana, Indonesia and the Philippines (IUCN, 2019). Along the Densu River in Ghana, initiatives strengthening women’s empowerment in the fisheries sector resulted in increased monitoring of water conditions and illegal fishing, restoration of mangroves by planting thousands of new seedlings, advocacy and pressure campaigns to thwart plastic waste, increased community efforts to clean fisheries habitats, and the establishment of a village savings and loan group to provide financing for women fish processors (IUCN, 2019).

In 2016, only one in the top one hundred seafood companies were run by women, and 54% of all seafood companies had no women in their boards (OECD, 2019b). Evening out the power imbalances could enable women to play a more important role in marine conservation.

Women in indigenous communities and their role in protecting ecosystems

Over 38 million indigenous peoples live across 12 OECD countries (OECD, 2019c). Indigenous communities draw much of their subsistence food, water and energy from the surrounding environment. Their close links to and dependency on well-functioning ecosystems makes indigenous peoples highly vulnerable to environmental damages and climate change. Deforestation and pollution caused by mass farming, industrial activities and expanding urbanisation all pose grave and growing threats to the livelihoods and survival of such communities. The decline in biodiversity affects them directly (UNEP, 2016).

Women in traditional and indigenous societies play a central role in ecosystems’ management, on which have accumulated traditional knowledge and largely depend for sustenance and medicine. Indigenous women have played a fundamental role in environmental conservation and protection throughout the history of their peoples. Historically, in traditional societies, indigenous women and men have often had equal access to lands, animals and resources. Many of these societies used to be matriarchal, providing a strong role to women as managers of the household and the family, the founding pillars of their societies. However, this has been
changing as ‘modern’ practices and legislation were introduced in the patriarchal, capitalist system of Western-culture countries (UN, 2010).

Addressing the vulnerabilities of women in indigenous groups in both OECD countries and the developing country context is not only a matter of justice and fairness. Their vast wealth of traditional knowledge about the medicinal properties of plants and other benefits that can be drawn from ecosystems as well as sustainable management of natural resources is fundamental for survival of those communities and their ecosystems.

As indigenous peoples increasingly interact with ‘modern’ economies and societies, it is often indigenous men, rather than women, who participate in the decision-making and planning of projects related to natural resource management in their communities. As a result, the valuable knowledge of women and their attitude towards their environment are often ignored. Furthermore, the move from collective ownership and responsibility to titled land and inheritance laws often leads to the discrimination of women, which reduces incentives to protect the environment. All these negative effects can create cycles of declining productivity and sustainability, environmental degradation and growing food insecurity.

Recognising the specific importance of Indigenous Peoples and their communities, in 2002, the Permanent Forum on Indigenous Issues (UNPFII) was established as an advisory body to the Economic and Social Council (ECOSOC). The United Nations Environment Programme (UNEP) has a dedicated part-time Focal Point on indigenous issues since 2004. Indigenous Peoples can contact the Focal Point at any time regarding UNEP’s work programmes. In 2012 UNEP produced policy guidance on Indigenous Peoples, which covers the role of women and the involvement of communities in UNEP sustainable development projects (UNEP, 2012).

Building on Ostrom’s response to the tragedy of the commons, a place-based approach to indigenous economic development where the community question is at the core, can place women at the centre of governance in order to secure sustainable management of finite resources (OECD, 2020).

Questions for consideration

- What evidence is available on the differential impact of biodiversity loss and natural resource depletion on women and men?
- What policy efforts are needed to facilitate women’s role in biodiversity conservation and sustainable use of natural resources? Where are the main discriminatory practices in developed and developing countries that need to be tackled?
- How can women’s role in biodiversity, agriculture and fisheries sector be strengthened and leveraged for better environmental outcomes?
- What is the respective role of government, business and civil society in balancing economic, social and environmental goals with regards to biodiversity, agriculture and fisheries? What potential is there for partnerships?
- What can OECD and other IOs do in support of more sustainable environmental and social outcomes, including gender equality in biodiversity conservation, agriculture and fisheries?
References


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