



Ecosystem services: A gender perspective

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Introduction and “State of the art”

Nowadays there is an explicit acknowledgment by the sustainability research and policy agenda (e.g. Aichi targets of Biodiversity Conservation, Sustainable Development Goals) of the necessity of including the gender perspective for understanding the factors that underpin sustainable and equitable ecosystem management strategies (Banerjee and Bell, 2007; Arora-Jonsson, 2014; Meinzen-Dick et al., 2014). We consider gender as a social construct that determines one’s identity, roles and rights through the attitudes and relationships generated by being a member of society.²

The issue of gender and sustainability has mainly been approached from two different perspectives:

- (i) the different role of women and men in contributing to sustainable pathways and
- (ii) the differential impacts of environmental degradation on women and men (Agarwal, 2010; Arora-Jonsson, 2014; Meinzen-Dick et al., 2014).

Both are highly interconnected as the adaptation strategies developed by women and men for facing environmental change determine sustainable management practices together. Additionally to these two main perspectives, gender research also addresses how gender differences influence individuals’ access to ecosystem service (ES) benefits, the ecological knowledge they appropriate and use for ES management, and their positions in decision making processes affecting ES.

Extensive and balanced involvement of different social actors in the use, enjoyment and valuation of ES is of key importance to create just, legitimate and effective policies, institutional arrangements and management interventions for ecosystems and biodiversity. Involvement of different social actors in decision making related to ecosystem management³ allows for knowledge sharing and social learning, co-generating preferences and in the end making better decisions (Parks and Gowdy, 2013). In the name of inclusiveness, the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) has expressed its commitment to the integration of different worldviews and knowledge forms in its overall working procedure with a primary focus on the balanced representation of indigenous peoples and worldviews additional to western societies (Díaz et al., 2015). However, little attention has been paid to other marginalized social groups (e.g. discriminated by class, race or gender) that may also have values, perceptions, knowledge and motivations related to ES considerably different from the dominant interpretation of the majority within their societies. While in this SP we focus on gender exclusively, there are other aspects which the ES concept needs to take into account and which follow a similar

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² Early gender literature focused on the male-female dichotomy and those power relations and institutionalized practices that have created gendered roles and identities (Arora-Jonsson, 2014). While we think that this dichotomy is still relevant – and a rarely investigated issue in ecosystem services research – we are aware of recent developments that consider gender a continuum rather than a dichotomy and that widen the focus of gender research to transgender groups, such as the LGBT community. Discovering this aspect in more details goes beyond the scope of this synthesis paper and should be addressed beyond OpenNESS.

³ Here we use the term ‘decision making’ in a broad understanding that includes ES assessment and valuation as decision support, the act of making the decision, as well as implementation and monitoring that follows the decision.

argumentation as shown above (namely, age perspectives, sexual orientation, intersubjective aspects etc.). The SP on social justice and conflicts provides a deeper understanding of these issues (Kretsch and Kelemen, 2016).

As Villamor et al. (2014) and Iniesta-Arandia et al. (2014) point out there are very few published results on gendered preferences for ES in the international scientific literature. Some recently published studies present comparative results of women's and men's preferences for ES, but even if they found significant differences between the choices of women and men, the reasons for divergence were almost never investigated in a systematic way (see e.g. Reyes-García et al., 2010; Martín-López et al., 2012; Allendorf and Yang, 2013; Kalaba et al., 2013; Orenstein and Groner, 2014; Schulp et al., 2014; Shen et al., 2015). We have to look beyond the core literature on ES to find theoretical frameworks and methodologies that help uncover and understand the gender specific dimensions of ES management.

Gender studies in general, and the literature of eco-feminism, Women Environment and Development (WED), feminist political ecology and feminist ecological economics in particular, are rich in case studies related to natural resource management or agrobiodiversity management, which underline that gender differentiation exists in several steps of decision making related to natural resource use (Agarwal, 2010, Villamor et al., 2014). There are several documented examples, mainly from the developing world, suggesting that women often apply sustainable management practices that contribute to biodiversity maintenance (see Meinzen-Dick et al., 2014 for a systematic overview of 83 empirical cases, Howard, 2003 for plant resource management and conservation around the world, Upadhyay, 2005 for India and Nepal and Pataki et al., 2011 for a Hungarian example). Although early research of eco-feminism and WED reflected a romantic view of women, assuming that they inherently connected with and had more caring attitude to nature than men (Meinzen-Dick et al., 2014) because they were closer to nature through their biological reproductive capacity (Jackson, 1993, Leach, 2007); whether women actually act more sustainably (i.e. putting global and long term interests first) is contested. Additionally, although early gender studies often considered women as a homogeneous group, there is an increasing recognition in environmental feminist studies about the diversity of women's motivations, attitudes, knowledge, and practices while incorporating other analytical variables beyond gender (Banerjee and Bell, 2007; Iniesta-Arandia et al, 2014; O'Shaughnessy and Krogman, 2012).

Later studies pinpointed that the sustainable management practices of women are the result of several social, economic, institutional and ecological factors interacting with each other, often putting women to marginal status within society (Meinzen-Dick et al., 2014). Critical voices brought the idea into the feminist literature that women can also exploit natural resources and destroy their environment depending on the social and institutional context (i.e. the power relations) they are embedded in (Jackson, 1993). The viewpoint that there is no homogenous category of women in natural resource use became widely accepted and reinforced by empirical findings. Iniesta-Arandia et al. (2014) proved, for instance, that women of different age and with different farming background show remarkable differences in their relationship to nature, including their perceptions, motivations and agricultural practices.

Problems / Issues to be discussed

It should be acknowledged that the relationship between gender and ES, and especially the motives behind gender-specific preferences are context dependent and difficult to generalize (Arora-Jonsson, 2014), but still worth investigating in a detailed and systematic manner. Proving that gendered preferences do exist in relation to ES should have implications for the design of institutional arrangements for ecosystem management (Caro-Borro et al., 2015). The masculinisation of the decisions related to ES (incl. assessment of ES as well as taking, implementing and monitoring decisions on ES) leads to diverse motivations and knowledge sources being ignored from the decision making process, and institutional outcomes failing to reflect the needs, interests and worldviews of society as a whole. Depending on what sort of motivations and knowledges are dismissed, the masculinisation process can further strengthen the instrumental view of ES and narrow down the space for other motivations (i.e. altruistic, ethical), value-types (i.e. relational, intrinsic, see Díaz et al., 2015) or activities associated with ES.

Therefore, the following key issues can be identified that need further discussion:

1. How the gendered human-nature relationships influence preferences to ES?
2. How valuation can take into account gendered preferences?
3. How decision making and institutional arrangements can build on gendered preferences?

Taking into account that gender studies with an environmental focus have so far been more abundant in the context of the developing world than in western societies, empirical research on the above mentioned aspects with a European focus would have an important added value to literature.

Significance to OpenNESS and specific Work Packages⁴:

Nowadays, gender equality is a general requirement in EU funded projects. With H2020 the requirements go beyond purely explaining gender balance and gender supporting the consortium. Proposals are now requested to identify if any, and which of, the research addressed is gender sensitive. OpenNESS could go beyond this, if gender specific approaches to the analysis of human-nature relationships through the concepts of ES and NC could be added to the scientific work already ongoing in different WPs.

WP1 (Key challenges and conceptual frameworks): As a conceptual work package, WP1 could include theorizing the relationship of gender and ES based on a broad array of relevant literature (including e.g. eco-feminism, feminist political ecology and feminist ecological economics).

WP2 (Regulatory frameworks and drivers of change): Institutional analysis provided by WP2 could be broadened with a gender specific research direction (e.g. how existing institutional structures define gender specific roles in ES management). Would scenarios look differently if gender aspects were taken into account? Furthermore it is also important to consider how gender-specific issues in other sectors can be affected by ES & NC. A clear example would be women's health issues, which may be differentially affected by ecosystem change.

WP3 (Biophysical control of ecosystem services): Is about sustainable ecosystem management – see challenge on SEM below.

WP4 (Valuation of the demand for ecosystem services): If empirical data proves that gendered preferences and impacts do exist in relation to ES, gender sensitive valuation methods should be developed to provide the opportunity to express differences in values, perceptions of and preferences for nature. Both monetary and non-monetary valuation methods, proposed by WP4 to case studies, could be revised from the gender perspective (i.e. do they provide equal opportunities to men and women to express their preferences? do they induce a crowding-out or a crowding-in effect in relation to gendered preferences?) and methodological improvements could be proposed, either for individual methods or for the integrated valuation approach.

WP5 (Place-based exploration of ES and NC concepts): Empirical data on the existence of gendered preferences, interests, needs, knowledge, perceptions and management practice can be collected in different case studies. Comparing empirical data from differences in urban and rural areas, or along a rural-urban gradient, as well as from different European and non-European countries can reveal the effect of context specific factors on gendered relationship to nature (including gendered preferences to ES), see for example Camarero and Sampedro (2008).

WP6 (Integration: Synthesis and Menu of Multiscale Solutions): Are the Multi-scale Solutions gender specific? Should they be?

⁴ For a brief description of the OpenNESS Work Packages see: <http://openness-project.eu/about/work-packages>

Relationship to four challenges⁵

<p>Human well-being:</p> <p>The contribution of ES to human well-being may not only depend on the status and trends of ecological processes, but also on how social and institutional contexts influence the equal access to ES of certain groups. Having different roles and identities along the continuum of women-men deeply influence the person's relationship to nature, access to the ES it provides, as well as the well-being effect realized. Part of human well-being is health, gender aspects are relevant here.</p>	<p>Sustainable Ecosystem Management:</p> <p>We can assume that a more differentiated focus (e.g. gender) improves the sustainability of ecosystems, although additional research and experimenting is needed to investigate how and to what extent gendered roles and identities of landscape managers influence the service providing capacity of ecosystems. Local ecological knowledge is gender sensitive (see Reyes-García et al., 2010) and therefore should be explored respectively and not one fits all approach.</p>
<p>Governance:</p> <p>Governance mechanisms should take into account that women and men may have different preferences for ES, different needs, and different knowledge and should provide institutional arrangements that do not crowd out any of these gendered differences.</p>	<p>Competitiveness:</p> <p>There is little knowledge on how gendered preferences to ESs relates to competitiveness.</p>

Recommendations to the OpenNESS consortium:

Our recommendation to the consortium is to apply a gender sensitive research approach including:

- the critical analysis of how existing institutional arrangements can articulate and contribute to the overlooking of gender and, thereby, gender inequity in access to and use of ES and NC; and,
- the development and the application of research methods and engagement techniques that are able to create an enabling space for both women and men to assess and value ES, and to create institutional solutions that are gender sensitive.

We further like to request a stronger focus on gender balance in policy, conservation and research projects at all levels of management. To this end, recommendations to science and policy could be developed, during the project synthesis phase, through an open dialogue with OpenNESS case study research teams and CABs.

Key papers

Agarwal, B. (2010): *Gender and green governance. The political economy of women's presence within and beyond community forestry*. Oxford: Oxford University Press.

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Villamor, G. B. et al. (2014): Gender differences in land-use decisions: shaping multifunctional landscapes? *Current Opinion in Environmental Sustainability* **6**: 128-133.

Background and cited papers

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⁵ There are certainly more societal challenges; the reduced number presented here is due to the four major challenges mentioned in the work programme of FP7 to which OpenNESS responded.

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