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Gender and 'Modern' Biofuels

A Guidance Paper for Policy-Makers

By Valerie Nelson and Yianna Lambrou



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Main cover image by Barbara Banda, Malawi

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Summary

This guidance document seeks to improve understanding among policy-makers of how different types of liquid biofuel schemes may affect women and men in rural areas and to outline possible actions to engender biofuel policy-making and programmes, maximizing the opportunities to empower women and to avoid worsening gender inequalities.

1. Introduction

Biofuels offer a range of rural development opportunities through which women smallholders and marginalised groups could escape energy poverty and increase their incomes and livelihood strength, but there can also be social and environmental risks involved.

So what are the different value chain models in s? Four main types of biofuel schemes can be identified, although combinations of these are also possible:

1. Large-scale commercial plantations and processing facilities
2. Smallholder contract farming and outgrower schemes
3. Smallholder participation in value chains beyond production (e.g. mixed ownership and management schemes, new roles in transport and marketing)
4. Decentralised, village-based schemes.

The evidence to date from studies and from broader literature on the socio-economic impacts of plantation developments, outgrower schemes and community-scale biofuel projects indicates that the models have different likely outcomes for rural women and men. The evidence base on socio-economic impacts of s is still limited and requires expansion. In particular, the gender dimensions of biofuel development have been neglected and more field studies are urgently needed. It is important that more attention is given to gender issues by policy-makers and planners, because the opportunities that exist for smallholders and local communities, especially in alternative value chain models and small-scale, decentralised community schemes, are not as available to women and marginalised groups as to men. Moreover the risks posed by biofuel developments, particularly by large-scale commercial schemes are gender differentiated. Although the risks affect whole rural communities, the incipient evidence on s (and the broader gender and agriculture literature), shows that widespread gender inequalities lead to disproportionate impacts on women smallholders, outgrowers and workers. (See NRI Working Paper Series on Climate Change, Agriculture and Natural Resources, No. 3: 'Scoping the Gender Issues in Biofuel Value Chains', 2011 for more information on the evidence of the gender impacts of s). This paper has been prepared to inform policy-makers and practitioners about the potential gender issues arising from different kinds of biofuel schemes and how to engender the responses.

2. Exploring different value chain models and their gender implications

Some biofuel value chain models carry fewer social and environmental risks than others and offer greater opportunities for women's empowerment. The schemes which have the clearest and most significant associated risks are the large-scale commercial biofuel value chains. Small-scale, decentralised schemes offer the greatest opportunities for women's empowerment, although scaling up may be an issue. Outgrower biofuel schemes may offer more opportunities for women's empowerment, but there are also potential downsides, if smallholders become indebted to companies providing them with services and cannot produce their own food, and potential employment benefits are not supported by improvements in women's education and skills training, for example, or if there are unclear or unfair contracts. Women are likely to be most affected by these negative impacts, although whole communities can suffer and more in-depth studies are needed of the pros and cons of smallholder schemes.

Four different models can be distinguished for biofuel value chains and these are explained below, alongside the gender issues specific to that model.

Model 1: Large-scale commercial liquid biofuel schemes

Large-scale commercial value chain schemes are the most widespread model and are based on export-oriented or domestic energy supply feedstock production, on plantations with large-scale processing and usually involving large transfers of land from communities to companies. Large companies or government are often involved as investors and local people or migrant labourers work as employees primarily on the plantations, or in processing plants. The overall opportunities and risks of these schemes are outlined in Table 1.

Table 1: Large-scale commercial schemes: Opportunities, risks and gender issues

Opportunities and risks

- Potential national level benefits (to treasury, rural employment).
- Many social and environmental risks, (e.g. deforestation, food insecurity as farmland is converted to energy crops, poor labour rights).
- Questions about whether the benefits will trickle down through job creation and who bears the costs of plantation development.
- There are risks of unfair resource dispossession in situations of weak community land tenure security.
- Sustainability standards for s are gaining increasing currency, but may struggle to secure real improvements on plantations – impact assessments are required. They are also unlikely to be able to effectively tackle off-site impacts.

Some gender issues

Unequal impacts: impacts are not felt equally by women and men because of existing gender inequalities. While social and environmental risks are faced by everyone in poor, rural communities, women, female headed households and marginal groups are disproportionately exposed, because they have the highest reliance on natural resources for their livelihoods and are less likely to have access to education. Gender norms usually place roles of domestic chores and subsistence production upon women, on top of their reproductive roles. Women may also be involved in cash cropping, trade and other non-agricultural livelihood activities of course, but this is less commonly the case as a core activity in many rural areas of developing countries. This means that they are often more immediately affected by the reduction of natural resources on common lands (often termed 'idle' lands by policy-makers) and upon which they rely for collection of wild edible plants, fuelwood, etc. Similarly, they are likely to be the first affected by the loss of ecosystem services, biodiversity and agro-biodiversity and by any increases in food insecurity. Men may be more affected in some locations by livestock sector impacts, such as decreased access to fodder for large ruminants again because of common gender roles which means that this task is commonly their responsibility.

Land tenure security: Women generally have less power in household and community decision-making which means they are less likely to be consulted over large land transfers. All inhabitants of poor rural communities will suffer if they lose customary land rights without proper valuation of those lands to their livelihoods and do not receive adequate compensation. Women are also less likely to participate in compensation payments negotiations. There is evidence that resettlement programmes (which may be planned where communities are displaced by new leasing agreements with companies) rarely give sufficient attention to gender issues in planning and implementation.

Access to paid work: Women also tend to have less access to paid work because of gender discrimination. At the root of the issue is the discrimination which means that they have less access to formal and informal education, and then face discrimination in recruitment even if they have the same skills as male counterparts. There is ample evidence from agribusiness value chains in developing countries that women often have poorer working conditions and labour rights compared to their male colleagues. Women are not always paid equally for the same work as men and they are less likely to have written contracts or to have permanent status. Further, they are more likely to be stuck in lower status jobs with fewer chances of promotion. Women suffer more from sexual harassment. They are also more exposed to inadequate health and safety measures in agro-chemical application. Women often have other childcare and domestic tasks to complete at the end of the day as well their paid work. Evidence is emerging that these conditions are also found in biofuel schemes where land is leased by or given in concessions to companies. The total numbers of jobs created have not always lived up to developers' initial claims in large-scale developments and in some cases in south-east Asia while local community residents are given employment initially (e.g. in clearing forested areas) the work is then given to migrant workers instead who may be easier to control than local workers). New developments could increase seasonal and/or permanent migration. Male seasonal outmigration to work on schemes has in some cases had negative impacts for rural female farmers left with few resources to maintain livelihoods, in contexts of a feminisation and ageing of the rural population.

Sustainability standards: These are being developed aimed at improving social and environmental standards in biofuel developments, but gender criteria are lacking. In-depth impact evaluation of sustainability standards are lacking, so it is difficult to know if they are effective in addressing the many serious concerns relating to socio-environmental impacts. But it is difficult for such standards to be able to address the indirect, off-site impacts of plantation developments on local communities, for example the impacts on food security and deforestation – impacts which disproportionately affect women. A question thus arises as to whether the improvements which biofuel-related standards might lead to on plantations (e.g. in terms of labour rights) are sufficient to allow developments to continue when such plantations are still the cause of detrimental off site negative impacts.

Model 2: Contract and outgrower smallholder farming

There are initiatives in which *smallholder engagement* in biofuel value chains is directly supported by companies or governments, through the establishment of large schemes of contract and outgrower production (sometimes linked to larger plantation schemes). Farmers use their own land but are contracted as farmers/outgrowers by biofuel companies seeking more secure supplies. Companies offer technical assistance and access to inputs. In some countries government incentives encourage buyers to buy from smallholders, not only large companies - but the distribution of benefits and costs and participation in decision-making will not necessarily be equitable along lines of gender, age, social grouping and evidence of socio-economic impact is

lacking. There are risks to this form of biofuel development. In south-east Asia there are examples where smallholders have become indebted to the company that provides services such as land clearance, and access to seeds, while also having to buy food crops rather than produce it themselves leaving them in a worse off position than previously. Again the whole household may be affected, power inequalities within the household mean that women may have less food to eat than male household members as well as more work to gather wild foods and potentially limited control of the income. It is not possible to generalise because gender and social dynamics are site specific, but what is emerging from the literature are common patterns of disadvantage and disproportionate impacts for women compared to male counterparts.

Table 2: Contract and outgrower smallholder farming: Opportunities, risks and gender issues

Opportunities and risks

- Benefits to companies (e.g. more secure supply, access to land) without the need to acquire vast tracts of village lands, political capital from working with smallholders.
- Smallholders gain access to new markets, technical advice and newer technologies, inputs, credits, quality control, and marketing support, and where prices are agreed in advance a reduction in price risks. This can all lead to higher smallholder incomes.
- No immediate large-scale resource dispossession of communities, but as land values rise these risks increase.
- Production problems can occur where farmers cannot meet contract (e.g. climate variability or because of socio-cultural constraints).
- Unethical practices by corporate investors (e.g. quota manipulation and corruption, failure to buy contracted production when management or marketing problems, unreliability and exploitation of monopsony).
- Lack of consultation and poor management can lead to discontent among farmers who then sell to other buyers, affecting processing by the factory. Inputs (supplied on company credit) may be diverted to other uses, affecting yields.
- Smallholders may not be given written contracts or they are ambiguous. Communities may not be adequately consulted in the design of the project or in specific contracts.
- Opportunities for sustainability standards for smallholder production, but increasing stringency can exclude smallholder farmers.
- There is insufficient knowledge about incentives and schemes to support smallholder participation, such as equity sharing, joint ventures, financial incentives for buyers to buy from small producers, etc.

Some gender issues

- Empirical evidence is lacking on the gender dimensions of outgrower farming and contract production and of other innovations such as joint venture, equity sharing, or government incentives for smallholders to buy from smallholders.
- There are opportunities for women to benefit from participation in successful schemes and women may have specialist knowledge in cultivation of biofuel crops such as *Jatropha*. Some outgrower schemes target women's groups specifically. But in many places women lack access to land or have insecure land rights and so may be less able to participate in their own right and to retain control of income that they have generated.
- Women tend to experience weaker resource tenure security than men and so are more at risk of dispossession over time from other extended household and community members as land values rise. Women usually have lesser influence in household/community decision-making than men and may not be fully consulted in the decision to participate in such a scheme, in project designs and in the drawing up of contracts.
- Where there are production problems and market failures, women have less material resources to fall back upon.
- Men may be affected by reductions in fodder accessibility where they are responsible for large ruminants.
- Governmental and corporate extension services suffer from male bias. Women farmers may not be given the same access to credit, technical advice, or inputs as their male counterparts. Information is more targeted to male farmer needs, interests and crops; there are also fewer female extension workers which can prevent women participating in training; media and timings of meetings may not be appropriate for women, etc).
- Social and environmental standards have not yet been developed for smallholder biofuel situations. Increased stringency could exclude smallholders, especially female smallholders, who do not always have the resources and information to meet such criteria. Where standards are being applied, gender provisions should be included (e.g. in terms of women's representation in contract negotiations, in access to training and extension), but capacity building and investment is needed to complement standards which can be blunt tools for effecting change.
- Hired and child labour on smallholder farms is too often invisible and requires more attention, including the gender aspects.

Model 3: Smallholder social upgrading in biofuel value chains beyond production

This model refers to smallholder involvement in biofuel value chains beyond production of the feedstock. They could become involved in other value chain functions such as in the stages of milling, refining, transport and marketing, and end-use. Smallholders could also have different roles in terms of power and ownership, becoming involved in joint ventures, having share-ownership of milling businesses for local use and supply contracts. Bio-refining is complex and expensive and so economies of scale demand involvement of larger investors, but other activities (e.g. in transport services, milling) could involve smallholders in different types of roles and agreements. However, prevailing gender discrimination is likely to present barriers to the participation

of women and marginalised groups, particularly in functions which are traditionally ascribed to men. More in-depth research is needed to see how sustainable, equitable and feasible such approaches could be and in what situations they can promote rural livelihoods and how women can be empowered to participate (see Table 3). For example, a recent modelling of scenarios of gender employment intensities in a low income, land abundant economy, Mozambique, concludes that investing in s can help reduce Mozambique's poverty, especially when female workers are better educated and when agricultural productivity is supported by policy to ensure that food shortages do not arise (Arndt, C., R. Benfica, and J.Thurlow (undated) 'Gender implications of s expansion in Africa: The Case of Mozambique'. World Bank: Washington).

Table 3: Smallholder participation in value chains beyond production: Opportunities, risks and gender issues

Opportunities and risks

- Opportunities for smallholder farmers and local communities to be more involved in other value chain functions - ownership/co-operative management of mills, distribution, work as intermediary traders, transport contractors, operating rural retail outlets and markets, but not complex and expensive bio-refining.
- Relatively little is known about this kind of upgrading of roles of smallholders so that they capture more added value and power in the value chain. More examples of promising innovative models are needed.

Some gender issues

- Opportunities for female smallholders to participate in such innovations, capturing greater added value which can enable them to diversify activities, gain skills and confidence and understand the value chain better.
- Women's participation is generally more limited than that of men because of gender discrimination and lesser access to resources. New schemes could target women farmer groups and include targets for women's participation.
- Capacity building support is likely to be needed to achieve women's participation and empowerment.

Model 4: Small-scale, decentralised biofuel schemes, based on community land ownership and participation

The final liquid biofuels model is based on decentralised community based projects usually on a smaller scale, and based on local land ownership and potentially offers a range of positive benefits for participants. Smallholder farmers

and rural groups, especially women's groups, are being supported to establish and run small-scale technologies to generate clean energy for local use and to support income-generating activities. These decentralised projects can potentially involve a large number of participants. However, as with any rural development project there are gender issues to be considered.

Table 4: Decentralised, community based programmes

Opportunities and risks

- Clean energy access (and associated income generation opportunities) for local communities can lead to improvements in education and health.
- Income generation for local communities through sale of feedstock seeds and diversification.
- Some dispossession risks over time.
- Environmental impacts exist with scaling up, but much less likely than in large-scale schemes.
- Energy can be used to achieve better food storage and transport, leading to food and income security gains.
- Technical and scaling up issues.

Some gender issues

- Opportunity to work with women's groups in increasing access to energy services, energy enterprise and income generation (sometimes with health/education benefits).
- Many projects target women's groups, because of their traditional household energy roles and these projects present opportunities for women's empowerment.
- Risks of participating in experimental projects - women may have fewer resources to cope with failures.
- Creeping dispossession over time may occur as commercialisation of crops occurs and where some farmers achieve greater success than others. Also risks of resource acquisitions by corporate investors (e.g. seeds, land, water)
- Potential for unequal distribution of benefits and costs between women and men (e.g. increased incomes for some but who controls the money? Extra work may be required and women usually are responsible. Women may be more affected by environmental impacts).
- Can be important reductions in drudgery (e.g. through energy for milling) especially for women, but new tasks incur extra work which could affect food crop production and other tasks.
- Potential for women to gain new skills and confidence once they have mastered new technology, formed groups, run energy services, etc.

3. Key action points for gender-sensitive development

Action points on gender and large-scale, commercial schemes

1. Exercise caution in relation to large, commercial biofuel schemes involving large-scale land transfers (leasing and concessions by governments to companies).
2. Assess the different impacts of larger-scale, commercial biofuel schemes on women and men. Gender analysis is required of the opportunities and impacts of such schemes in different parts of the world, in varying contexts, across different feedstocks (including second-generation s) and in diverse value chains.
3. Integrate the evidence and findings from gender assessments into policy-making, taking into account the full value of land and its resources for local livelihoods, including so-called 'idle lands', the value of tackling energy poverty in rural development and the importance of building up ecosystem resilience as insurance against climate change shocks and stresses and as part of a more sustainable pathway.
4. Support the participation of women and disadvantaged groups in the formulation of national biofuel policies, through increased representation in national working groups and fora. As policies and guidelines are still being developed in many developing countries, there is an opportunity to support women's collective action and advocacy so that women's interests and priorities are heard.
5. Support local community capacity to participate in consultations through practical steps especially for women and marginalised groups: more convenient timing of meetings; more appropriate choice of language and use of visual methods to overcome literacy barriers; women-only focus groups as well as male-only focus groups; specific targets of numbers of women attending meetings can be given to community leaders to create an expectation of involvement).
6. Build the capacity of local communities to support their participation in compensation negotiations, through legal advice and awareness-raising on legal rights. Women should be encouraged and supported to participate. Those providing this assistance should include women advisors and specific measures taken to facilitate women's involvement and the articulation of their interests. Third party independent facilitation can provide external support for women's involvement; however, this requires gender sensitivity on the part of the facilitator. If local government is involved, it is important to ensure that payments are not siphoned off as a revenue stream, but that women receive these payments.
7. Governments should hold companies to account concerning the job numbers promised in investment plans and ensure that women are not discriminated

against in recruitment. In some situations targets could be set to ensure that women secure a fair share of the new positions, although other types of capacity may be required to enable them to apply as well. Governments should require proposals to outline plans for decent workplaces and labour rights, particularly for women workers and for migrant labourers. Ratification by government of ILO labour standards is as important for s as it is in other global value chains. It is also important to recognize that voluntary standards alone are insufficient to prevent many on-site negative impacts and offsite ones and government enforcement capacity may be weak. Support NGOs that work with women workers and create an enabling environment for trade unions that can represent women workers' views. Voluntary sustainability standards can be used to help achieve minimum standards, but a great deal depends upon the financial incentives in the value chain.

Action points on gender and contract farming and outgrower schemes

8. Evaluate examples of newer alternative biofuel value chain models (e.g. contract farming, outgrower schemes, governmental incentives to encourage buying from smallholders), from a gender perspective. Consider the distribution of impacts between women, men and different social groups as well as opportunities to participate in decision-making. Provide support for replication of successful innovations that can empower smallholders, especially women farmers. Avoid such schemes if they lead to dispossession or increased food insecurity – both of which disproportionately affect women.
9. Provide seed funding or financial incentives for schemes that promote buying from smallholder farmers – and integrate gender targets and monitoring and evaluation.
10. Support independent facilitation in contract negotiations and provision of legal advice to local communities – but in particular ensuring the women and marginalised groups are involved and given information.
11. Encourage gender training and awareness-raising in biofuel companies which provide extension to farmers.
12. Increase knowledge among agricultural extension workers of biofuel technologies and crops and ensure they have a good understanding of gender issues, including the interests and priorities of women farmers as well as men, and the challenges that female farmers face. Set targets for recruitment of female extension workers and institute an ethos of gender awareness in extension services through leadership and strategic planning.
13. Strengthen women's land tenure security and access to resources and inputs. For example, ensure that the land rights of both spouses are recognised in law, provision of legal advice to women, etc.

Action points on gender and smallholder social upgrading

14. Evaluate new initiatives that support smallholder participation beyond production, in order to identify successful approaches and factors. Explore the potential for rural women's participation in such initiatives, and for scaling up targeted at women's groups.
15. Consider the distribution of benefits (e.g. incomes) and costs (e.g. labour) in evaluating these initiatives.

Action points on gender and decentralised, community-based programmes

16. Conduct more in-depth impact assessment of small-scale, community based biofuel projects to identify and quantify the impacts for women, men and different social groups and to inform best practice.
17. Encourage participatory approaches in planning, implementation and evaluation, ensuring that gender issues are considered fully at each stage of the project cycle (distribution of impacts, participation, power relations). Promote participation of women's groups in community based biofuel projects by targeting women's groups in such schemes.
18. Take steps to strengthen women's land and resource tenure security to avoid creeping resource dispossession over time (e.g. policy reform, capacity building, legal advice to rural women, cadastral service capacity building, gender awareness raising)
19. Encourage community biofuel projects to support women's participation in project decision-making not only in production.
20. Support women's entrepreneurial capacity building through skills training, support for networking and access to resources such as credit, etc.
21. Provide technical support to women's groups given that biofuel projects can be based on newer, less well tested technologies.

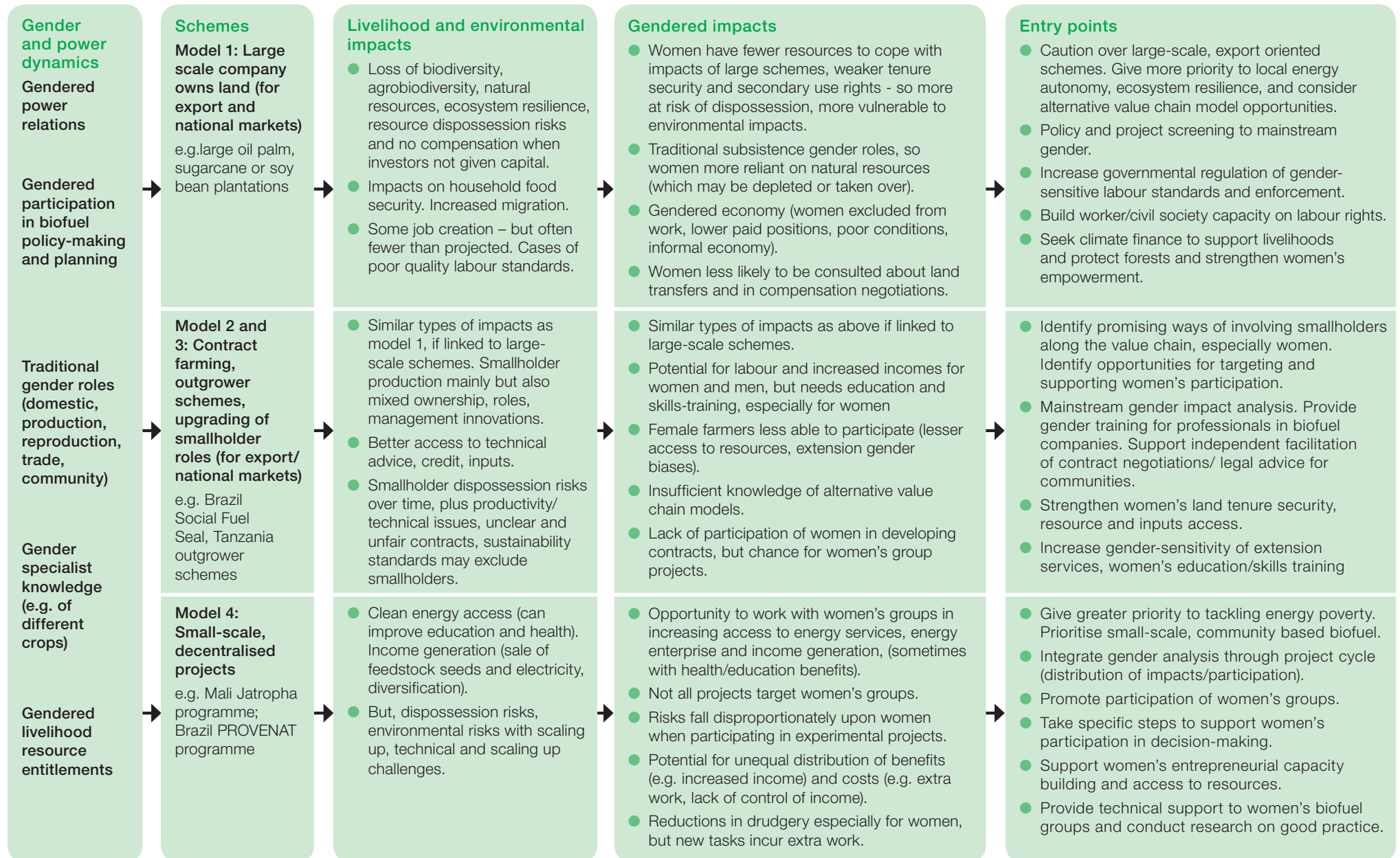
Action points on gender and policy-making

22. Gather more in-depth research on the characteristics, opportunities, and risks of different biofuel value chain models and schemes and the likely outcomes for different stakeholders – particularly women and marginalised groups in different contexts.
23. Inform policy-making processes with evidence on socio-economic and gender impacts of biofuel developments and from direct participation of women. Learning alliances or platforms could be supported to promote action-learning (involving all key stakeholders including women and women's groups) in community-based, decentralised biofuel programmes. Such alliances would enable scaling up of positive innovations and a mechanism for sharing lessons on good practice on gender and biofuel development.

24. Civil society groups should advocate women's empowerment and greater gender sensitivity in biofuel policy formulation. They should support the involvement of women and women's groups in participatory policy and guideline development.
25. Increase governmental regulation of labour standards and enforcement to protect women and male workers.
26. Increase pressure on international companies investing in biofuel developments to recognize the ethical implications of their investments (e.g. the impacts on local livelihoods) and to act accordingly. Stronger alliances are needed between worker organizations and civil society to lobby on labour rights.
27. Explore climate finance as well as overseas development assistance to support livelihoods and protect forests
28. Strengthen women's land tenure security through policy reforms and gender training of key policy-makers
29. Promote consultation process with women and men from local communities in the design of projects, compensation negotiations and private sector-community 'partnerships'.
30. Tackling energy poverty in rural communities should be a priority. Until newer biofuel technologies are more widely available and rural communities are able to take them up, attention needs to be paid to improving traditional use of biomass through participatory technology generation (e.g. tree planting and fuel-efficient stoves). Biofuel policies should be based on solid empirical evidence comparing the advantages and disadvantages of different biofuel value chain models.
31. Importantly, assessments should take into account the extent to which climate resilience is enhanced rather than undermined by biofuel schemes. Benefits may include new employment or income generation for rural households, which could build climate resilience, but it is important to understand how sustainable this adaptation is under future climate scenarios – and importantly to ask 'resilience for whom?' as adaptation has to be equitable to be effective.

Diagram 1 Biofuel and rural livelihoods – vulnerability and policy context.

International (e.g. globalisation, rising/volatile energy prices, oil geopolitics, climate change, increased democracy and decentralisation processes) and national diverse energy policy aims and lack of biofuel policy guidance, rapid private sector investment, diverse land tenure and ownership patterns, gender equality trends, economic growth and social inequality trends, value chain stakeholders of varying power and roles





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