Food and Agriculture Organization of the United Nations

GOVERNANCE AND POLICY SUPPORT
POLICY BRIEF

Supporting agrifood systems transformation in Indonesia with governance innovation

Second edition

The Indonesian Government is committed to agrifood systems transformation to achieve the Sustainable Development Goals (SDGs). It has made agrifood systems transformation a national priority under its Medium-Term Development Plan 2020–2024, which emphasises the government's ambition for the country's agrifood systems to become healthier, more equitable, more sustainable, and more resilient. Building on its participation in the 2021 United Nations Food Systems Summit, the Indonesian Government has also developed a Strategic National Pathway for Food Systems Transformation based on a series of national and sub-national dialogues.

To support the operationalization of this National Pathway, the Food and Agricultural Organization of the United Nations (FAO) has coordinated an agrifood systems modelling project. Under this project, researchers from the Christian Albrechts University of Kiel (CAU), International Food Policy Research Institute (IFPRI), International Institute for Applied Systems Analysis (IIASA), and International Institute for Sustainable Development (IISD) have piloted an innovative modelling approach (see Box 1) to analyse the impacts, synergies, trade-offs, and political feasibility of various policy interventions for agrifood systems transformation in Indonesia. The modelling project aims to identify technically sound and politically feasible policy interventions, and thereby to support the Indonesian Government to make informed policy decisions for agrifood systems transformation.

This policy brief highlights the main findings of the modelling project, identifying key implications for policymaking for agrifood systems transformation in Indonesia.

BOX 1: Innovative modelling in support of agrifood systems transformation

The modelling project applies the MIRAGRODE[1] and GLOBIOM[2] models in an aligned way to analyse outcomes across three broad policy goals of the Indonesian Government: promoting healthy diets; ensuring sustainable (local) supply of agrifood products; and promoting environmental sustainability. To assess the impacts of policy interventions in these areas, the modelling uses indicators taken or adapted from commitments adopted by the Indonesian government, including indicators on poverty, undernourishment, value added in agriculture, forest cover, and greenhouse gas (GHG) emissions. Stylized scenarios representing the implementation of policy interventions are modelled and the results analysed to evaluate impacts and trade-offs compared to a business-as-usual scenario. The modelling results are then integrated with the results of a survey of agrifood systems stakeholders to conduct a political economy meta-modelling analysis using a computable general political economy equilibrium (CGPE) model[3] to assess the political feasibility of the modelled policy interventions.

[1] IFPRI's MIRAGRODEP model provides a national-level picture of agrifood system performance and assesses impacts of policy interventions over the medium-term (to 2035).

[2] IIASA's Global Biosphere Management Model (GLOBIOM) focuses on the agriculture, forestry, and bioenergy sectors, at national and sub-national levels, assessing land use and its dynamics, greenhouse gas (GHG) emissions, trade, production, and consumption over the short- and long-term (2030 and 2045).

[3] A computable general political economy (CGPE) model is used to provide a better understanding of the institutional, political, and socio-cultural dynamics of the Indonesian agrifood system – including the political feasibility of given policy interventions.

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What the modelling reveals

Indonesia is making steady progress on agrifood systems transformation objectives. . .

The modelling projects that under business-as-usual, with current policies and practices continuing unchanged, Indonesia will continue to make steady progress on several policy objectives. Economic growth and rising incomes will help reduce poverty, undernourishment, and the share of the population unable to afford a healthy diet. The rate of deforestation will continue to decline, although continued land conversion for agriculture will lead to further primary forest loss. Agricultural expansion will also lead to increased greenhouse gas (GHG) emissions from agriculture, but overall GHG emissions from agriculture and land use change will decline due to lower rates of deforestation.

...but there is scope to accelerate progress through targeted policy interventions.

Progress on eradicating undernourishment can be accelerated through – for example – social safety net measures that target the most vulnerable, improving their ability to afford nutritious foods. Interventions to support farmers, such as public investments in agricultural research and development, and in infrastructure, can boost agricultural production and productivity. Reductions in GHG emissions from agriculture and land use change can be accelerated through interventions that target emissions reductions directly, such as a carbon tax, which is found to be particularly effective.

Targeted interventions generate trade-offs and synergies across policy objectives...

A social safety net programme targeting undernourishment is found to be effective in reducing undernourishment (primary aim) and in boosting agricultural production and farm incomes (synergies), but it is also projected to lead to increased cropland expansion, and corresponding losses in primary forests and biodiversity (trade-offs). Similarly, interventions to conserve forests or lower GHG emissions are found to be effective in realizing environmental policy objectives (primary aims), but they also raise the cost of producing food, leading to slight increases in undernourishment relative to business-as-usual (trade-off).

...but combining interventions can mitigate these trade-offs and capitalize on synergies.

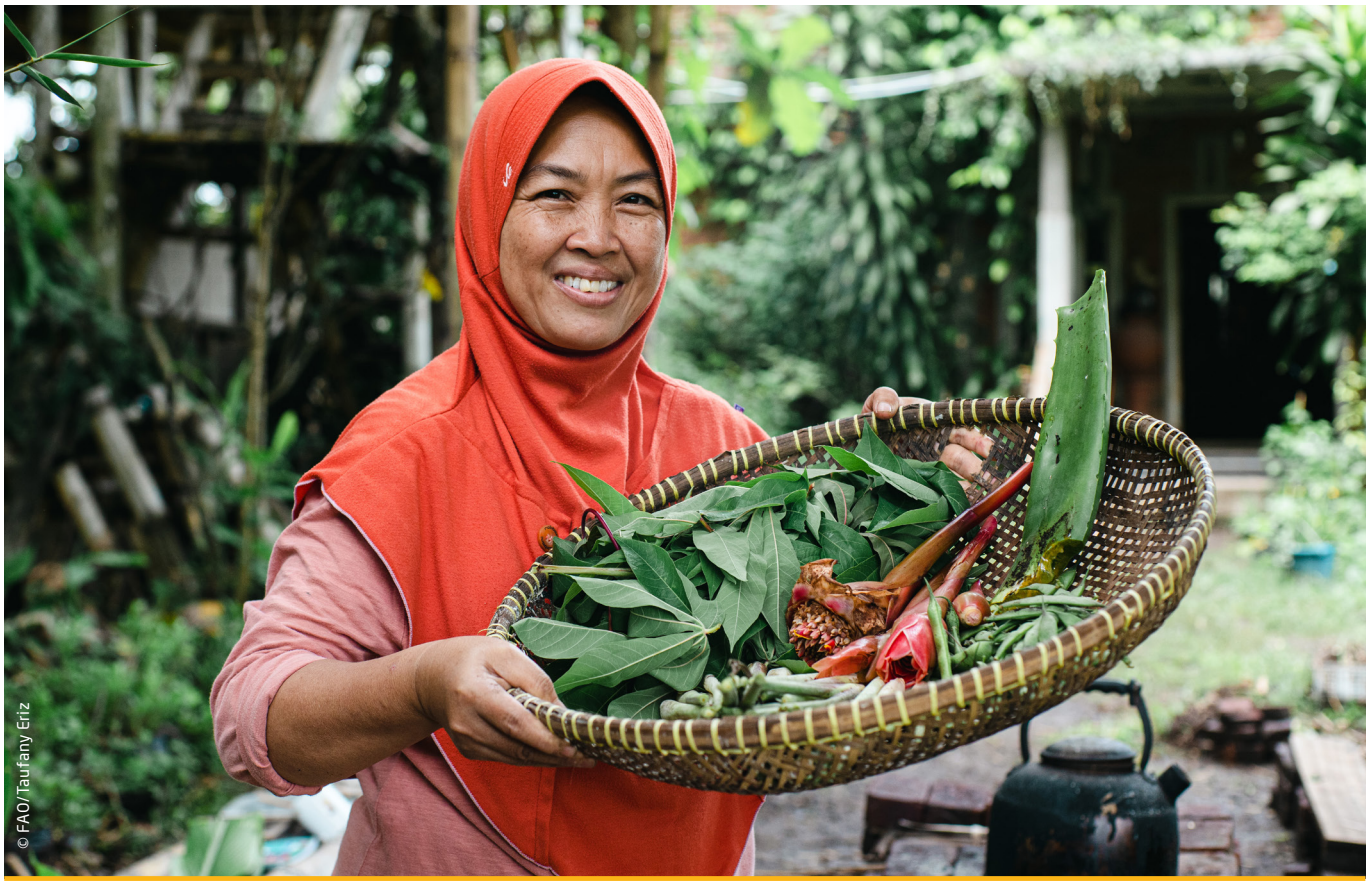
A combined package of interventions that includes those targeting undernourishment, boosting sustainable production, reducing food loss and waste, and conserving forests, is found to be most effective at generating positive outcomes across all policy areas – economic, social, and environmental. These interventions are found to reduce poverty and undernourishment, increase agricultural value added per worker, improve dietary quality, lower emissions intensity and conserve forest cover. This finding highlights the importance of taking a comprehensive and integrated approach to policymaking for agrifood systems transformation in Indonesia.

Policy interventions impact different regions of Indonesia differently...

There is huge diversity between Indonesia's regions. Unsurprisingly, the modelling finds that national-level policy interventions have different impacts on different regions. For example, an intervention on forest conservation is found to lead to increased forest cover (relative to business-as-usual) in all regions, except in Bali Nusa-Tenggara. The modelling also finds that there is no intervention or combination of interventions that achieves optimal outcomes across all regions. Rather, different interventions or combinations are more effective at achieving multiple policy objectives in different regions. In Java, for instance, combining interventions on forest conservation and agricultural intensification leads to positive outcomes for forest cover, GHG emissions, agricultural value added and food self-sufficiency.

...so the regional implications of national policies need to be considered carefully.

Policymakers should carefully assess which policy interventions or combinations of interventions are most appropriate for each region for ensuring positive outcomes across policy areas. They should also ensure distributional justice through adopting measures that mitigate regional inequalities that arise from – or are exacerbated by – national-level policy interventions. Ensuring regional representation in policymaking processes and implementation can help with this.



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The beliefs and priorities of Indonesian agrifood systems stakeholders are well aligned...

The stakeholder survey reveals significant alignment among Indonesian agrifood system stakeholders in terms of their beliefs and priorities regarding agrifood systems transformation. They prioritize economic policy objectives over social and environmental goals. They support subsidies being used to promote sustainable agricultural practices and being targeted towards poorer farmers, greater public investment in agriculture, income transfers to poor households, and stronger enforcement of measures to combat deforestation.

...but not perfectly with the modelling findings.

However, meta-modelling using the survey results reveals differences between (a) what stakeholders believe is needed to achieve agrifood systems transformation objectives and, (b) the combination of interventions found by the modelling to be optimal for achieving these objectives. The differences lie not in the types of interventions identified, but rather in their calibration. For example, the optimal package of interventions identified by the modelling involves a higher carbon tax, more restrictive land-use regulation, and smaller consumer transfers than what is preferred by stakeholders. This gap between modelling results and stakeholder beliefs raises concerns about the political feasibility of the optimal policy intervention packages identified by the modelling. It also suggests the need for further engagement between researchers and Indonesian agrifood systems stakeholders to bridge this gap.

Next steps

These findings can support Indonesia's agrifood systems transformation efforts in several ways. They can be used to inform policy choices and prioritization by Indonesian policymakers, or as the basis for further work by researchers to assess the optimal design of specific interventions or to analyse policy coherence for agrifood systems transformation. They can also be used to deepen multistakeholder engagement around the design and implementation of policy interventions.

Learn more about this case

Woolfrey, S., Bizikova, L., Henning, C., Boere, E., Kozicka, M., Laborde, D., Piñeiro, V. *et al.* 2024. *Modelling the impacts of policy interventions for agrifood systems transformation in Indonesia – Governance and policy support: Report.* Second edition. Rome, FAO. https://doi.org/10.4060/cd1119en

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