

GREENING COMMODITY AGRICULTURE IN EAST AND SOUTHEAST ASIA

Lessons for policymakers

THE CHALLENGE

While since the 1970s the primary focus of agricultural policy in East and Southeast Asia has been food security, the development of competitive agri-food value chains has also been a feature of national strategies of export-led growth. The region now accounts for a prominent share of world trade in palm oil, rubber, coffee, tea, rice, cassava products, aquatic products, and other commodities. Yet, this explosive growth in commodity exports has come at a high cost to the environment.

For example, continuous monoculture production of grain and tree crops has reduced soil quality in many areas. Clearing of forests and wetlands has led to biodiversity loss. Excessive or inappropriate use of fertilizer and chemicals has polluted surface and groundwater. Field burning of rice husks has increased air pollution. Agricultural irrigation is depleting aquifers. Greenhouse gas emissions have increased due to loss of above and below ground carbon stocks and poor management of water resources, soils, and crop and livestock waste. The negative economic, human health and ecological impacts are significant. Thailand converted half the country's coastal mangroves to shrimp farms between 1975 and 1993, resulting in net environmental losses of over US\$ 4 billion. In Indonesia, the health effects from smoke and haze pollution associated with clearing forests for oil palm production include a two percent increase in regional adult cardiovascular mortality. Contaminated soil from agricultural and industrial practices exposes tens of millions of Chinese rice consumers to heavy metals. In Vietnam, coffee irrigation, which accounts for over 90 percent of groundwater extraction, contributes to water shortages in dry periods.

There is growing recognition of the problem and growing pressure from international buyers and civil society organizations to 'green' existing production systems and prevent further adverse environmental impacts. Many on-farm and landscape-scale practices to mitigate commercial agriculture's environmental risks exist. The volume of sustainably certified agri-food commodities has grown in recent years. Countries have begun to pilot and apply additional measures to create more awareness and change prevailing incentives and controls. Nevertheless, a large gap generally remains between green agriculture aspirations and applications. This is due to several factors:

- Agricultural policies emphasize the 'protection' of farmers and expansion of output to meet food security and economic growth targets, encouraging land expansion and more intensive use of agricultural inputs;



Land clearing leads to emissions and biodiversity loss in China. Photo courtesy of the World Agroforestry Centre.

- Consumers are still generally agnostic or unaware of environmental impacts of commodities, so consumer pressure for farmers to change their practices is low;
- It is difficult to mobilize voluntary market action on environmental costs for commodities that are low in value or invisible ingredients in processed foods or manufactured goods;
- Agricultural producers generally neither pay the actual costs of the scarce natural resources that they use nor are required to bear the costs of their environmental footprint;
- There are high transaction costs to reach large numbers of independent, unorganized farmers with technical assistance;
- Industry stakeholders include a diverse mix of players (by size, ownership, viability) among whom fair and effective programs of collective action are difficult to design and implement; and
- Capacities to design and implement 'green agriculture' regulations or programs and to monitor and assess the results are underdeveloped among farmers, firms, NGOs and government agencies.



This brief discusses roles that governments have or could play to prevent or mitigate adverse environmental impacts from commodity production. It draws on national policy analyses and assessments of experiences in six production landscapes with diverse policy innovations: in Vietnam (coffee in Dak Lak and shrimp in the Ca Mau coastal zone), China (tea in Yunnan), Thailand (maize in the Mai Chaem watershed), Indonesia (palm oil in western and central Kalimantan), and Philippines (bananas in Mindanao). Though many policy innovations are recent, clear lessons and recommendations for action already have emerged.

DIFFERING CONTEXTS, DIFFERENT ROLES FOR GOVERNMENT

Private businesses, farmer organizations and civil society entities can take individual and collective actions to address some of the above barriers and apply more sustainable practices. While very important, these private actions often have limitations of scale and scope. Government action is also generally needed to raise the standard of environmental stewardship. Governments can play many different roles in this arena. We refer to these as: Definer, Enabler, Funder, Regulator and Advocate. Table 1 identifies a variety of instruments which governments at any level can deploy in each of these roles. While the role of ‘Regulator’ has been most widely used in agri-environmental policy, other roles can be as powerful, or may be needed for regulation to be effective. The appropriateness and feasibility of applying these various instruments vary according to the nature, scale, geography and severity of the environmental risks; characteristics of the product and its markets; prevailing socio-political conditions; characteristics of the specific commodity industry, and capacities of key players.

Government as ‘Definer’: Setting goals, norms and milestones for greening agriculture

The government’s vision for agricultural sustainability may be embedded in national green growth strategies, progressive agricultural sector strategies, sub-national development strategies, and/or strategies for improving the competitiveness of particular sub-sectors. For example, in China, Five-Year Plans are now accompanied by Land Use Master Plans, which must consider critical ecosystem services based on government-delineated ‘Ecological Function Conservation Areas.’

Government as ‘Enabler’: Encouraging and facilitating voluntary action

In this role, government actively supports efforts for better production spearheaded by the private sector and civil society, for example through procurement policies that favor products from sustainably managed sources, data collection and analysis, research and development, advisory services, or by supporting certification processes. In the Mae Chaem watershed in Thailand, where commodity production in the forested upland watershed led to deforestation with negative effects on downstream water users, national and local governments have engaged with civil society organizations to promote better land management through watershed planning and management organizations. These Tambon Administrative Organizations are given freedom to raise revenues, issue local regulations, undertake development planning, and implement these plans.

Government as ‘Funder’: Mobilizing finance for green agriculture investments

Public revenues of national, sub-national or local governments may be allocated for direct investments, such as public works to restore land or improve irrigation systems, or governments may



An agricultural landscape in Northern Vietnam. Photo by Steven Jaffee.

Table 1. Government roles and instruments in environmental mitigation

Role	Instrument
Definer	• High-level political endorsement and advocacy for Agriculture Green Growth strategy and specific goals • Mechanisms for ministerial coordination across agriculture, environment, and related sectors • Designation of decision-making authority across national, state, and local government levels • Institutional support for multi-stakeholder landscape dialogue, planning, and coordination
Enabler	• Promotion of supply chain eco-standards, eco-certification, pre-competitive action • Institutional frameworks for private payments for ecosystem services • Public procurement of sustainably sourced commodities • Technical assistance for land managers and businesses • Research for technology innovation and adaptation • Information systems (e.g., land and soil maps; climate risks) • Incorporate environmental action in large, multi-sector green growth initiatives
Funder	• Producer subsidies to reduce cost of investments or transitioning to improved practices • Organizational subsidies to reduce cost of collective action/investment • Public payments to landowners/land managers for ecosystem services • Preferential access to bank finance for environmentally friendly producers/processors • Improved practices adopted in state-owned enterprises
Regulator	<i>Land use regulation</i> • Establish norms for human and ecosystem health • Direct regulation of private land use or management practices and processing industry • Zoning and land use planning, including generating spatial information at granular scale • Tenure and access rules for land and resources (including concession policy and conservation reserves) • Monitoring of environmental management and ecosystem health <i>Financial and market regulation</i> • Market and trade rules • Taxation of environmentally harmful practices or products • Environmental screening or review of agricultural investments • Liability systems (i.e. legal liability, enforcement incentives, damage liability)
Advocate	• Raising awareness of resource managers or users • Public media campaigns to educate citizens/consumers/buyers/investors • Public dissemination of monitoring data and evidence • Mobilizing and supporting allies and advocates

co-finance investments by private land managers (e.g. to subsidize landowner restoration of riparian areas); pay producers or communities for ecosystem stewardship benefitting the public good; or provide financial incentives (e.g., through preferential credit to producers who agree to use sustainable practices). For example, in Vietnam, the government is cost-sharing coffee farmer adoption of water saving technologies and providing preferential credit to farmers whose replanting of coffee is being accompanied by improvements in soil and water management practices.

Government as ‘Regulator’: Establishing and enforcing the ‘rules of the game’

Direct regulation, adequately enforced, can motivate improved use of water, land and forest resources. Regulation is often required to correct perverse incentives. Common regulations of this type include zoning for siting of production and processing, and requiring agri-businesses to protect habitats, wetlands, and wild

species, and tax policies that penalize harmful practices and products. For example, to address biodiversity threats from palm oil production in Central Kalimantan, Indonesia, the provincial government issued regulations on ‘Indigenous Lands and Peoples’ Right to Land’ and the ‘Provincial Regulation on Sustainable Palm Oil’, and is implementing a spatial geo-referenced performance monitoring system for the oil palm sub-sector to track compliance with regulations.

Government as ‘Advocate’: Mobilizing public support for translating the ‘vision’ into action

Government agencies may raise public awareness and mobilize action through information campaigns, calls for action by citizens, civil society and business, or convening stakeholder dia-

National, provincial and local governments can overcome structural constraints by playing different roles in different contexts.



logues. For example, in Yunnan, China, the city of Pu'er advocated for the environmentally-sensitive Pu'er tea agroforests to be recognized as an FAO Globally Important Agricultural Heritage Site, and also organized a major campaign of training and awareness for 'ecological renovation' of modern tea estates covering over 60,000 hectares.

RECOMMENDATIONS FOR MORE EFFECTIVE POLICY ACTION

In East and Southeast Asia, concerns about negative environmental impacts from accelerating commodity production are rapidly moving beyond international buyers and international civil society to domestic constituencies. There are, as yet, few major 'success stories' where growth in commodity agriculture in the region is associated with measurably improved environmental conditions or net reductions in greenhouse gas emissions over a broad spatial area. But the experience of these six case study landscapes provides some insights on how to overcome barriers and reduce drivers of environmental degradation that are relevant for policymakers across the region.

Clearly, there is no 'silver bullet'. Rather, policymakers need to bring to bear a portfolio of mutually re-enforcing measures.

Be proactive rather than reactive

While there is now a lot of experience and innovation to advance agri-environmental stewardship in the region, in most instances these actions do not yet constitute a 'strategy'. Most East and Southeast Asian agri-environmental policy continues to be reactive to outside pressure from buyers, consumers or external regulators; and rehabilitative, with measures to clean up physical damage and the damage to the reputation of the product or producing region taken only after serious environmental consequences have been manifested. Such reactive strategies reflect a poor understanding of the underlying risks and have often been very costly—for people, nature, and business, inefficient and with limited impact on environmental conditions.

Policymakers are now beginning to explore, and in a few cases embrace, an "Agricultural Green Growth" strategy that embeds environmental (and social) management in the core processes of agricultural development, from the definition of sectoral goals and targets, to the reform of policies and on through the design, implementation and evaluation of programs. Some are shifting the policy paradigm from a reactive to a proactive policy mode (see Figure 1), from *ad hoc* to integrated programs, and from policies intended largely to 'signal' greater environmental concerns to policies implemented to achieve real impact. Proactive strategies, that aim to prevent degradation from occurring, reflect a growing recognition of the economic opportunities that can arise from innovations that save costs, improve work or living conditions, effectively adapt to climate change, or differentiate products in the market.

Policy incentives and roles must be aligned so that local governments are incentivized to make mutually supportive decisions.

Align agricultural promotion and environmental protection policies

To date, 'Green Growth' visions in the region have focused on the energy sector. Aspirations in agriculture and environment still largely relate to how the environment impacts agricultural production (e.g., through climate change), rather than how the environment is impacted (negatively or positively) from agriculture. Many agricultural support policies remain in place that foster poor environmental stewardship, such as subsidies for fertilizer and the waiving of water use fees. With the exception of China, integrated agri-environmental policy instruments are relatively new. And among the cases studies, there are few examples of effective alignment between agricultural development and environmental protection policies. Concrete steps are needed to promote better alignment horizontally, between ministries, and vertically, between national, provincial and local levels of government.

Harmonize sector and sub-sector policies and programs.

Historically, different aspects of agriculture, land and resource use, environment, rural development and more recently climate change, have been split between departments affiliated with separate government ministries. All the case studies indicated that the lack of consistency across the policy mix was a major roadblock to pushing forward what works. With the increasing spatial overlay of activities and impacts, the policy structure requires targeted and organized processes for harmonization to avoid conflict and realize synergies, including information-sharing. For example, in Dak Lak, where coordination and enforcement of water management is split between different departments, a new legal framework is enabling local government (People's Committees) to take a proactive role in implementing national environmental policies.

Promote more diversified land use and market development.

Agricultural landscapes must increasingly provide a wide range of important products (food, feed, energy, building materials, medicines, etc.) and ecosystem services (watershed services, biodiversity, pollination, pest and disease control, climate regulation, etc.). This generally requires diversified land use on farms and across the landscape. Diversification can also increase economic and social resilience, and is an essential strategy for adaptation to climate change. While challenging to promote in areas where large plantation monocultures are long-established, there can be considerable financial benefits of intercropping and diversifying land uses (and species) where tree crops or commercial aquaculture are pursued. For example, local policymakers in Ca Mau province see both the environmental and commercial benefits of diversified land use, through their conception of an 'organic coast' that maintains the less input-intensive shrimp-mangrove aquaculture system.

Target policy instruments spatially. The type and intensity of environmental impacts from agricultural production depend not only on production practices in a particular field, but

also on the location of that field within the landscape, its proximity to critical watershed features or habitats, its proximity to other farmers using those same practices, and the broader pattern of land use. Thus, spatial targeting is essential for

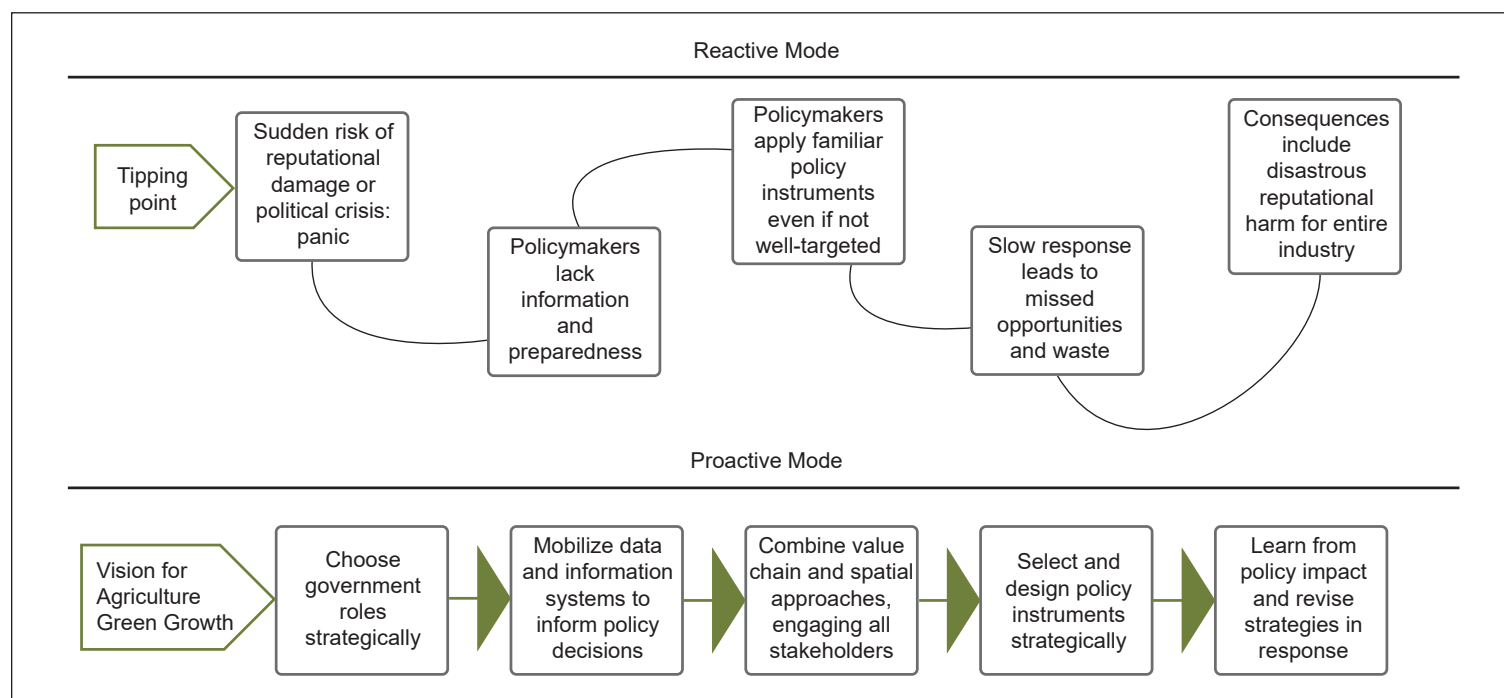


Figure 1. Reactive versus proactive policy approaches to the environmental challenges of commodity agriculture

many agri-environmental policy instruments. Data used to inform policy must be spatially disaggregated. For example, Yunnan initially planned to focus compensation for conservation set-asides on areas with more economically marginal production as a lower-cost policy option. However, spatial analysis showed that the areas offering the highest biodiversity gains were actually those with higher profits and productivity, prompting a change in strategy.

Devise alternative revenue-raising strategies for local government. Many local governments have been given greater responsibilities for implementing national environmental as well as agricultural development policies. But they need to raise revenue and create jobs in order to maintain their development trajectories, and fear of ‘chasing away’ industry or losing public revenues from selling or taxing natural resources can be an impediment to implementing policies to improve environmental performance of commodities in the jurisdiction. National governments must find ways to help local governments devise alternative revenue-raising options that do not conflict with green growth strategies. For example, in China, cash transfers and enabling local governments to tax chemical inputs were used as alternative means to generate revenue so local governments could adapt national agri-environmental strategies.

Choose government roles strategically

To develop more proactive and effective policies, policymakers need to choose government roles and instruments more strategically.

Draw on a complementary mix of policy instruments. The case studies demonstrate the importance of complementarity among policy instruments and finding the right mix in the right sequence. It is difficult to have successful regulation with weak enforcement capacity, to promote voluntary action without proper legal frameworks, or to create domestic standards with-

out effective awareness-raising. Promoting voluntary action may require a portfolio of both carrots and sticks. For example, in the Yunnan tea case, government acted as Definer (through national and regional and local green growth initiatives), Regulator (through land use planning/zoning laws), Enabler (through training/extension), Funder (through subsidies for reforestation), and Advocate (through appeals to producers adopt the process of geographic indication).

Clarify the respective roles of local and national policy.

Defining clear roles for different levels of government is important. In several of the landscapes studied, national governments acted as the Definer, but left implementation to the local level without the proper support needed for the policy to succeed. For example, in the Mekong Delta, while master plans that lay out pathways for sustainable development are abundant, implementation at the local level is minimal, and siloed policies have blocked sustainable development. Yet, without participation of local governments in defining processes their buy-in is difficult to acquire. Policy incentives and roles must be aligned. If local government officials fear that enforcing national law will create an incentive for production to shift out of their jurisdiction, they have a good reason not to comply with these laws. For example, if the Government of Central Kalimantan requires all companies who request concessions to produce palm oil on degraded land and follow RSPO principles, a neighboring province can ‘outcompete’ it by having weaker rules. National government must step in to ensure basic standards of environmental performance are met.

Use different tools to influence large growers and smallholder producers. The structure of commodity production will necessarily influence the selection of policy instruments. Where production is heavily concentrated among relatively few large production units, the most effective action will often be to implement regulatory measures or promote use of production standards. For example, in the plantation-led Indonesian palm



oil sector, emphasis is on voluntary international (RSPO) and mandatory national standards (ISPO). However, where production is highly fragmented among smallholders, equal or greater attention to enabling, funding and promoting functions will be needed. A regulatory approach has proven elusive in altering practices amongst Vietnam's more than 500,000 smallholder coffee producers, yet an array of awareness-raising, training and concessional financing schemes are now being applied with some success. Fragmented Vietnamese shrimp production is being subsidized by public investments in water treatment and technical support for clusters of farmers, while the increasingly concentrated catfish aquaculture sub-sector is moving toward mandatory adoption of good aquaculture practice standards.

Engage all stakeholders and combine value chain and spatial approaches

Shifting agricultural practices and systems and reversing existing degradation on a broad scale can rarely be achieved through action by a single stakeholder group or a single program. Policy-makers must build coalitions of critical stakeholders to advance and support their policies, including civil society and private business, to promote integrated landscape management initiatives that combine value chain and spatial approaches.

Build local, regional and national multi-stakeholder coalitions to support policy objectives. Proactive efforts are needed to generate a shared vision for agriculture green growth in producing regions and produce more constructive, cooperative relationships among agricultural producers, other industry actors, environmental advocates and local constituencies. Local governments and communities can be empowered by playing a

leading role in agricultural and land use planning, clarification of tenure and access rights, and having resources for achieving compliance with environmental performance standards. Governments should use their convening power to ensure that policy instruments reflect inputs from, and are accepted—even championed—by many stakeholders.

Build on technical and policy innovations piloted by civil society. While some governments remain cautious, international experience points to the importance of local civil society engagement in the policy process. In Mae Chem, Thailand, the Royal Projects Foundation and Raks Thai played critical roles in moving the agri-environmental policy agenda forward. In Indonesia, a vibrant civil society and NGO sector is advocating effectively for the protection of indigenous land rights; in the Philippines, civil society is rallying around public health issues from agricultural pollution. Civil society has also taken on other roles. Research and pilot projects have generated new production methods and natural resource management practices that reduce trade-offs between yield and environmental protection. For example, in Mae Chaem, Thailand, domestic NGOs supported by international NGOs such as CARE and the World Agroforestry Centre, conducted pilot studies of PES, promoted agroforestry and organic production practices, and developed other programs which were later scaled through government action.

Partner with the private sector around value chains, certification and shared risks. Private companies in the region have begun to take action within their value chains to address issues of environmental degradation. To promote better environmental stewardship by farmers and downstream players, and to distinguish products derived from sustainable practices, use is often



Monoculture maize grown on steep slopes without conservation measures in Thailand. Photo courtesy of Raks Thai.

Islands of sustainability in a sea of bad practices are unlikely to result in significant mitigation of environmental risk in agricultural commodity landscapes.

made of production process standards, either domestic (e.g. Vietgap; IPSO) or international (Rainforest Alliance; 4C; RSPO), with the latter typically involving eco-certification. These standards can provide common and transparent guidelines, although they tend to focus on farm-level practices and not on environmental risks at a broader landscape level. Indeed, stakeholders need to consider eco-certification as a tool rather than a strategy in and of itself. Companies have begun to seek collaboration with government and other actors to reduce and share operational and market risks that cannot be controlled within the conventional value chain, such as climate change, watershed management to secure reliable water supply, and community relations. For example, companies sourcing coffee from Dak Lak and palm oil from Kalimantan are active in new multi-stakeholder initiatives to address water quality and deforestation challenges, respectively, that they cannot address on their own. Policy leaders should find ways to leverage this new interest from private sector stakeholders.

Promote integrated landscape initiatives. ‘Islands’ of sustainability in a ‘sea’ of bad practices (e.g., a few farms complying with certification among many who do not) are unlikely to result in significant mitigation of environmental risk in agricultural commodity landscapes. The challenge of achieving numerous agricultural, environmental and social objectives on a fixed land and resource base, with diverse stakeholders, has prompted wide-ranging innovation in partnerships for integrated landscape management. These landscape initiatives are emerging as platforms for negotiation and collaborative planning, agreement on new rules and program design, and coordinated action to reach agreed goals at landscape scale. They aim to reflect socio-ecological complexity and diverse stakeholder perspectives and values, while being informed by objective analyses of tradeoffs and synergies. More than 97 such initiatives have been documented in Southeast Asia, engaging on average 11 stakeholder groups from six sectors, including governmental entities from different ministries and levels in 98 percent of initiatives. Leadership roles are variously played by government or inter-government agencies, public-private partnerships, civil society organizations, producer organizations, agribusiness and/or indigenous peoples’ organizations. Among our case studies, emergent landscape initiatives include the Coastal Resources for Sustainable Development Program for shrimp in Vietnam, the Tambon Administrative Organizations for watershed management in Thailand, and the Pu’er quality tea initiative in China; new initiatives are developing around oil palm landscapes in Kalimantan and coffee in Dak Lak.

Strengthen organizational capacity, data and knowledge systems

Effective implementation of all the policies discussed above requires adequate ‘green’ agriculture capabilities, including data, knowledge, skills, management systems, physical assets, and relationships among all stakeholders.

Develop robust public sector agri-environment data systems. It is essential to develop robust public sector agri-environment data systems. Skills and resources are needed to collect and interpret environmental data (e.g., water quality, groundwater levels, greenhouse gas emission), conduct envi-

ronmental assessments of proposed large-scale agricultural investments, apply green accounting methods to agricultural value chains, and model or measure cause-and-effects in the application of agricultural and landscape management practices. Such information is critical for determining present conditions, setting objectives, relating potential costs and benefits, setting appropriate norms and rules and monitoring their compliance. The lack of reliable data was an important constraint in the case study landscapes, including the absence of hydrological models in the Dak Lak watersheds, the unclear ratio between shrimp growing areas and mangroves in Ca Mau and the state of soil conditions in Yunnan. On the other hand, the OneMap initiative in Indonesia and Central Kalimantan’s collaborative mapping efforts are signs of progress.

Share information widely among stakeholders. Collected information needs to be made available to all stakeholders, to enable voluntary action by private and civil society sectors, encourage and enable regulatory compliance and mobilize support for implementation. Local governments and producers need to be familiar with the evidence that is motivating green growth policy action, in order to implement national plans and policies. Meanwhile, local knowledge and understanding of complex ecological systems must be conveyed so national government agencies can incorporate them into policy visions and long-term strategies. Facilitators who have the trust of stakeholders can play a key role in communicating environmental risks and mitigation opportunities. For example, in Mae Chaem, Thailand, Raks Thai provided local stakeholders with critical information for understanding and negotiating land and resource rights.

Improve capacity to administer and implement agri-environment policies and programs. Effective implementation of agri-environment policies and programs requires well-trained staff at all levels of government, among supply chain actors and in civil society. There is a need to strengthen public agency staff’s ‘hard competencies’ (e.g. technical and analytical skills) to incorporate environmental risk into agricultural land use planning, design appropriate regulations, and align the design of agricultural and environmental policies; and also their ‘soft competencies’ (e.g. leadership, relationship building, facilitative skills) to deliver technical assistance, promote inter-ministerial policy coordination, and collaborate in landscape-level natural resource management initiatives. To build the necessary institutional capacity, governments need to assess areas of strength and weakness, prioritize capacity building needs and devise programs to invest in capacity strengthening.

CONCLUSION

There is growing motivation, energy and leadership in East and Southeast Asia to pursue ambitious goals to mitigate—and even reverse – the environmental risks and impacts of commodity



production, while also meeting economic and social development goals. Yet the region's more progressive agri-environmental policies are still in a fairly early phase of design and implementation. There is more to learn about strategic integration of sectoral goals and policies, design of data and information systems, sequencing of policy responses, leveraging capacities of different stakeholder groups, application of green

accounting methods, and other aspects of public policy and program design. Context-specific analysis is needed. Policymakers will benefit from taking a learning approach to policy development, regularly assessing their progress and shifting course as needed. Together, they can mobilize more systematic assessment of such policy issues and experiences across the region.

Recommendations

Be proactive rather than reactive

Align agricultural promotion and environmental protection policies

- Align sector and sub-sector policies and programs
- Promote diversified land use and market development
- Target and coordinate policy instruments spatially
- Devise alternative revenue strategies for local government

Choose government roles strategically

- Develop a hierarchy of action across policy roles
- Draw on a complementary mix of policy instruments
- Use different tools for large growers and smallholder producers
- Clarify the respective roles of local and national policy

Combine value chain and spatial approaches, engaging all stakeholders

- Build local, regional and national coalitions
- Build on technical and policy innovations piloted by civil society
- Partner with the private sector around shared risks
- Promote integrated landscape initiatives
- Reconceive certification as a tool, not a strategy

Strengthen organizational capacity, data and knowledge systems

- Develop robust public sector agro-environment data systems
- Share information widely among stakeholders
- Improve capacity to administer and implement agro-environment policies and programs

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Download the book, learn more about the case study landscapes, and find more on agriculture green growth policy and implementing integrated landscape management at www.ecoagriculture.org/easer.

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EcoAgriculture Partners works with a wide range of partners and collaborators – from farmers and community organizations to businesses, policy makers, and donors – providing direct support, education, training, research, and policy analysis to help these groups implement and support effective integrated landscape management practices and policies.

This brief is based on the publication

Scherr, Sara J., Kedar Mankad, Steven Jaffee, and Christine Negra, with Tanja Havemann, Janjarang Kijitkhun, Uray Endang Kusumjaya, Samiksha Nair, and Naomi Rosenthal. 2015. *Steps Toward Green: Policy Responses to the Environmental Footprint of Commodity Agriculture in East and Southeast Asia*. Washington, DC: EcoAgriculture Partners and the World Bank.

Steps Toward Green was published as part of the Greening of Export Agriculture in East and Southeast Asia research program, coordinated by the World Bank. The study was implemented under EcoAgriculture Partners' program theme, Policy and Market Innovations for Integrated Landscape Management. The findings, interpretations and conclusions expressed in this document do not necessarily reflect the views of the Executive Directors of the World Bank Group or the governments they represent. The World Bank Group does not guarantee the accuracy of the data included in this work.

SEPTEMBER 2015