SIANI
Swedish International Agricultural Network Initiative

Scaling up agroecology for food security, empowerment and resilience

Policy Brief
October 2016

POLICY RECOMMENDATIONS

General vision

- Put farmers first: when scaling up, start from people's experience and capabilities, and engage the younger generation.
- Consider the social angle in all scaling up projects. Field-based social science research can help avoid unintended negative outcomes caused by superficial analyses of local contexts.
- Stop asking for scaling up in itself. Start adopting a systems perspective and focus on increasing agroecological knowledge.
- Invest in empowering rural women: this is proven to significantly increase productivity, reduce hunger and malnutrition, and improve rural livelihoods, not only for women but for everyone.
- Increase the support for smallholder farmers to adapt to climate change, and encourage food production that is local, sustainable, equitable and efficient.
- Remember that fertile soils that retain water, and are active in delivering ecosystem services for the agricultural system, are the basis for any agricultural scaling up process.

Policy-makers

- Allow space to experiment with different approaches and models in scaling up efforts – e.g. several small-scale projects with overlapping objectives rather than a single large-scale initiative.
- Ensure that smallholders and farmers have the opportunity to be involved in defining policies and making decisions about needed investments in agriculture.
- Make sure that the appropriate policies are in place to generate incentives for multifunctional agroecological systems. In particular this requires a long-term, holistic view of agriculture, instead of just a short-term business perspective.
- Invest in market access and infrastructure to ensure that farmers can engage in the market.

Private sector

- Promote an open and equal dialogue with all actors in the value chain. Get all the expectations and assumptions out in the open. In dialogue it is vital to recognize gender and other power relations and make efforts to reduce negative effects of commercialization.
- Incorporate smallholder farmers in value chains, e.g. through contract farming and formal agreements with farmer groups. Invest in logistics across value chain, e.g. in collection centres and storage facilities, and focus on reducing losses in the system.
- Recognize farmers' need to mitigate commercial and production risks. Don't encourage them to convert too much of their production to cash crops.
- Work with farmers as reliable partners, even if it means strengthening the farmers' bargaining position. In the long term it is better to have strong farmer groups as partners in the value chain.

Knowledge exchange between stakeolders in the EOA Initiative. Photo courtesy of PELUM Kenya.

Financial partners

- Be aware of the risk of repeating blueprint approaches when scaling up. Find a balance between expectations and a realistic understanding of the possibilities of your project to ensure flexibility. Local context, peoples' interest and goals must guide the process.
- Instead of giving "fish or fishing gear" to the poor, enable them to continuously develop their own "fishing" (or farming). Take advantage of the potential in local knowledge, initiative and creativity.
- Be flexible in funding in order to adapt to changing circumstances and local conditions (e.g. time frame, deliverables, and reporting).
- Offer opportunities for investment in value chain infrastructure through, e.g. offering safe, long-term loans to small-scale farmers and supporting governments in developing infrastructure for improved market access.

Research and development

- Devote more energy and resources to research on multifunctionality in agriculture instead of focusing on increased productivity of single crops. More research is also needed on systems-oriented projects, including on resilience, ecosystem services, and social aspects of scaling up.
- Promote more participatory research, where scientists and farmers collaborate to test new methods and varieties (e.g. action research), taking an agroecological approach.
- Strive for strong, equal, open links between scientists, extension workers, farmers and other actors, for constructive and iterative learning.
- Plan comprehensively and inclusively with key stakeholders for step-by-step scaling up. The planning process should be realistic about implementation, and include reflection on the scaling up processes and its feedback loops.

NGOs

- Projects should promote cooperation with people on the ground, so that good practice is shared.
- Assist farmers and farmers' organizations with transformative adult education and institutional development to enable them to contribute as equal partners.
- Work for better enabling conditions, e.g. advocate for organizational structures that stimulate innovative ideas and stakeholder dialogues.
- Scale out and tune in! Scaling up a project requires that all stakeholders listen to each other and understand the context.

New challenges

If the world is to feed more than nine billion people in 2050, business as usual is not an option. We need to fundamentally change the way we produce and distribute our food. Agroecology holds much promise, according to a series of recent international expert studies (IAASTD, 2009; de Schutter, 2010; UNCTAD, 2013; FAO, 2015). An agroecological approach redirects farming production systems towards diversity, local inputs and ecosystem services, instead of monocultures and fossil fuel-based inputs such as synthetic fertilizers and pesticides. The question is: how do we best promote and scale-up agroecological farming practices that already work locally around the world?

In the past, efforts to scale up agricultural practices were too often based on a linear model, in which extension services would disseminate research findings from universities and research stations to farmers, with the aim that they would translate them into good farming practice and increased productivity. However, reality is much more complex, as studies on failed agricultural development projects have shown. A linear approach often overlooks the underlying socioeconomic reasons why the productivity of smallholders around the world remains low, e.g. that smallholders often cannot afford to invest in appropriate technologies and external inputs (Bawden and Packham, 1993; Duveskog, 2013; Wigboldus and Leeuwis, 2013). In contrast, an agroecological approach to scaling up aims to build the resilience of rural communities and poor families to increasing social and economic challenges (IAASTD, 2009).

Scaling up of what, how and for whom?

In every effort to scale up it is vital to ask the question, what is it that should be scaled up? Is it yield per hectare? The cultivated area? Farmers' income? Nutritional value? Or is it, as put forward here and in a previous SIANI policy brief (SIANI, 2015), rather a question of increased multi-functionality? That is, agricultural systems that are more resilient and produce a larger diversity of benefits (e.g. ecosystem services) and not only higher yields for single crops.

Agroecology is a scientific approach to sustainable agriculture. It includes the study of ecological processes in farming systems as well as the practice of applying ecological concepts and principles to the design and management of sustainable agro-ecosystems. As such, it minimises or precludes the use of fossil fuels and synthetic chemical inputs, and large-scale monocropping. Agroecology supports diversified and regenerative agricultural systems. As a systemic approach, agroecology also deals with the multifunctional dimensions of agriculture: food and fiber production, food security, health benefits, job security, social and economic justice, culture, and community resilience. And it includes important ecosystem services such as erosion control, carbon sequestration, pollinator protection, biodiversity conservation, water and nutrient cycling (nothing wasted, everything transformed), air and water quality. (IAASTD, 2009; de Schutter, 2010).

Above all, it is important to be careful not to view scaling up as a silver bullet for development efforts, when in fact there are other important issues that need to be addressed. For example, better integration of field-based socioeconomic research into development practice can prevent unintended negative consequences, such as putting smallholder families into debt through promoting agricultural techniques based on the purchase of expensive inputs.

There is also a need to address issues of access, inclusion and power in national and international markets. While choice of seeds is important, the need for new crop varieties is often overemphasised in agricultural development (Foley, 2014). A narrow focus on seeds and crop varieties tends to divert attention from other factors at a wider scale (e.g. increased resource efficiency, access to markets or storage facilities) that limit the potential of farming in many smallholder communities (see ex. of the Massive Food Production case study 5).

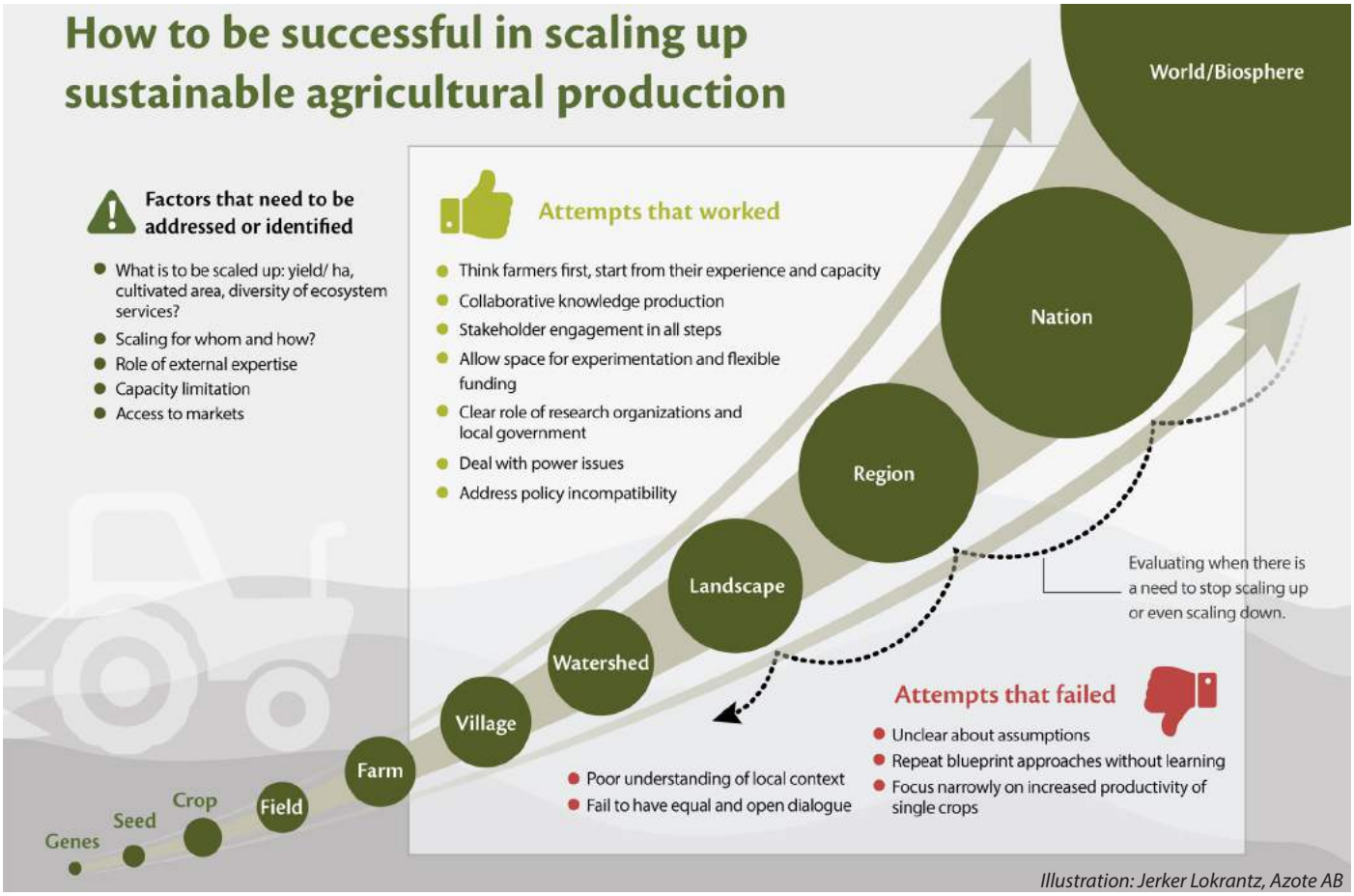
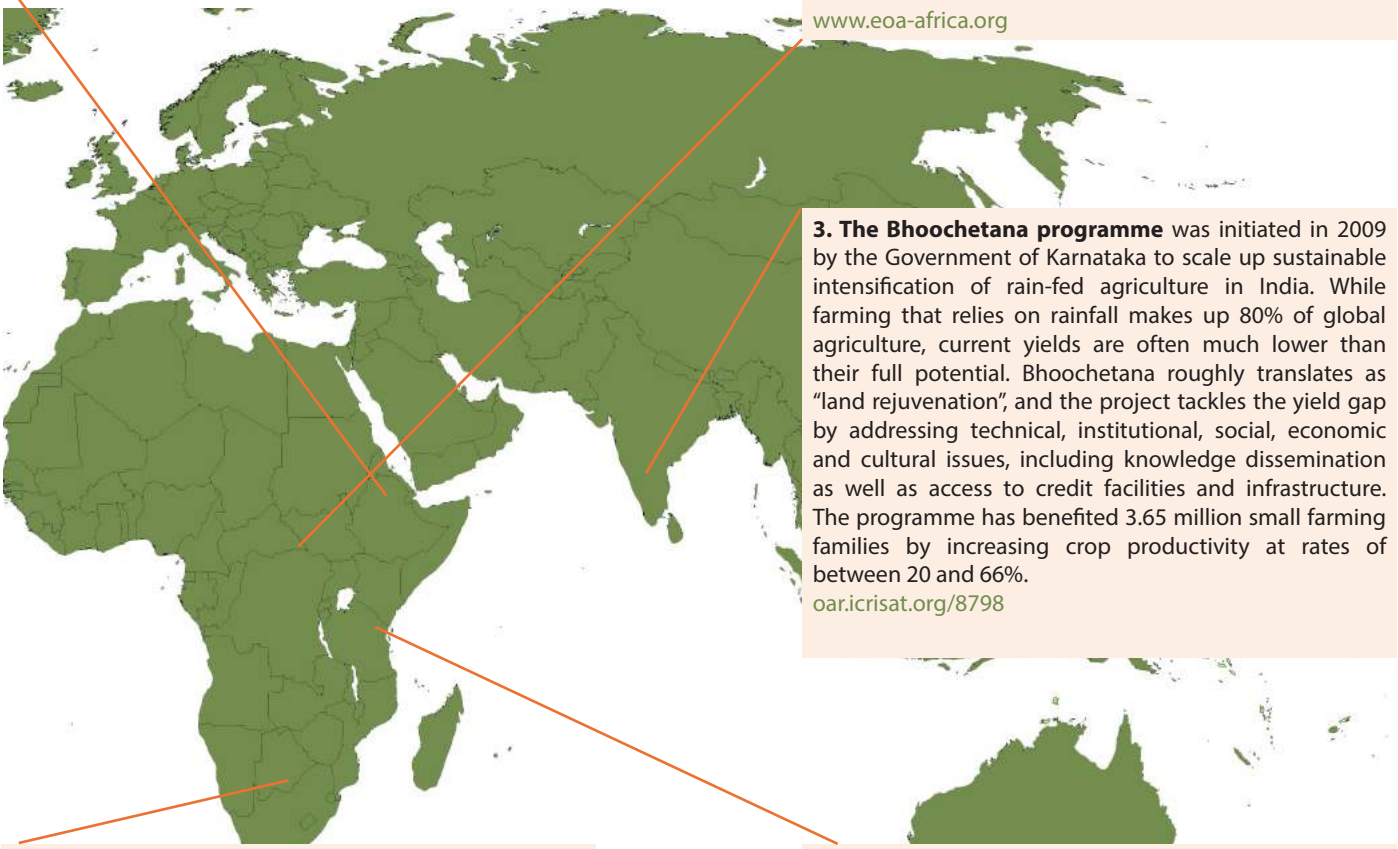


Illustration: Jerker Lokrantz, Azote AB

FIVE CASES TO LEARN FROM

1. Capacity Building for Scaling up of Evidence-based Best Practice in Agricultural Production in Ethiopia (CASCAPE) is a joint effort of the Royal Dutch Embassy and the Ethiopian government to improve agricultural productivity in Ethiopia. The project involves four regional states and works directly with 6000 households and indirectly with a further 60,000 households through farmer networks. One example of its work is the scaling up of wheat varieties that are resistant to disease (i.e. yellow rust) in mixed farming systems in the highlands of southern Tigray. After two seasons of participatory on-farm testing and demonstration these varieties have gained acceptance, and yields have increased in the whole region, on average from 2500 to 3600 kg per hectare.
www.cascape.info

2. Scaling up Practices of Ecological Organic Agriculture in Africa is an initiative (EOA-I) that was established in 2011. By 2025 it aims to mainstream ecological organic agriculture into national policies and plans to improve agricultural productivity, food security, and access to markets. The mission of the initiative is to promote ecologically sound strategies and practices among diverse stakeholders in production, processing, marketing and policy-making to safeguard the environment, improve livelihoods, alleviate poverty and guarantee food security. After successful pilot work, the project is being rolled out in Benin, Ethiopia, Kenya, Mali, Nigeria, Senegal, Tanzania and Uganda, with support from the Swedish Society for Nature Conservation (SSNC), (with resources from Sida), and the Swiss Agency for Development and Cooperation (SDC). Several million small-scale farmers are involved in the initiative.
www.eoa-africa.org



3. The Bhoochetana programme was initiated in 2009 by the Government of Karnataka to scale up sustainable intensification of rain-fed agriculture in India. While farming that relies on rainfall makes up 80% of global agriculture, current yields are often much lower than their full potential. Bhoochetana roughly translates as "land rejuvenation", and the project tackles the yield gap by addressing technical, institutional, social, economic and cultural issues, including knowledge dissemination as well as access to credit facilities and infrastructure. The programme has benefited 3.65 million small farming families by increasing crop productivity at rates of between 20 and 66%.
oar.icrisat.org/8798

5. The Massive Food Production Programme in South Africa was a state financed project run between 2003 and 2009, with the aim of increasing the productivity of smallholder maize farming in Eastern Cape province. Use of genetically modified maize and synthetic fertilizers was an important part of the effort. But the programme failed to improve smallholders' livelihoods for two reasons: first, a historically dominant, linear view of agricultural development was reinforced by a contemporary view of development as progress through growth; and second, the very small-scale focus on agricultural development through seed improvement blinded the farmers to key constraints of agricultural production located at much larger scales.
pub.epsilon.slu.se/10406

4. The Vi Agroforestry project in Tanzania
The Vi Agroforestry project in Tanzania, initiated in 1993, works in smallholder farming communities in the Lake Victoria basin where food security levels are low. The project has improved livelihoods through greater food and nutritional security, boosting available fuel wood and providing more sources of income. In addition, tree planting, sustainable land management and other measures have improved the natural environment significantly. By 2015, about 25,000 households were practicing agroforestry within the project. Similar work is carried out in Kenya, Rwanda and Uganda, and across all four countries more than 120,000 smallholders farmers now participate in agroforestry projects. Since its inception, the organisation has helped planting over 100 million trees.
www.viskogen.se/english

These five cases were presented at a workshop on Scaling up Strategies – from Technology Transfer to Empowerment, held in August 2014 in Uppsala, Sweden.

One size does not fit all

As the five cases indicate, the term scaling up is often connected with development, upgrading, and improving. They also show that ambitions to scale up can be driven by different aims and by different actors, from local "bottom-up" initiatives to more "top-down" government-centred plans. The latter can easily lead to a greater focus on compliance than would be the case if the motivation is rooted in conviction and genuine community engagement.

It is also important to consider whether it is better to pursue one big scaling up initiative or multiple, connected initiatives. The latter allows for diverse trajectories with similar goals. In a complex reality in constant change and with unpredictable events, it may also be more resilient to facilitate many bottom-up initiatives than trying to control all dynamics in one grand effort (Bennet and others, 2014). Moreover, it is crucial to recognize that different stages in a scaling process may require different strategies. In some regions and situations it might be urgent to increase agricultural production (in tons per hectare) to assure food security, and in such cases measures for scaling up that deliver rapid returns might be preferable. But elsewhere, where needs are not so immediate, multi-functional systems would be desirable, since over time they can achieve the same aim while also providing other benefits such as more nutritious crops, resilience, biodiversity, bioenergy, and other ecosystem services.

Above all, scaling up sustainable agricultural practices concerns both planet and people. It is therefore crucial to focus on what makes human partnerships flourish, including shared vision, shared learning, shared effort, and shared information.

Researchers from Sweden and South Africa in field discussing the outcome of the agricultural development project The Massive Food Production Programme (case 5, page 3). Photo by Lennart Salomonsson.

Among others the following documents have been reviewed for this brief:

Bawden, R. J. and Packham, R. G. 1993. Systemic praxis in the education of the agricultural systems practitioner. Systems practice 6 (1): 7-19.

Bennett, E. Carpenter, S. Gordon, L. Ramankutty, N. Balvanera, P. Campbell, B. Cramer, W. Foley, J. Folke, C. Karlberg, L. Liu, J. Lotze-Campen, H. Mueller, N. Peterson, G. Polasky, S. Rockström, J. Scholes, R. Spierenburg, M. 2014. Toward a More Resilient Agriculture. Solutions. Vol 5, No. 5. pp. 65-75 - http://www.thesolutionsjournal.com/node/237202

De Schutter, O. 2010. Report submitted by the Special Rapporteur on the right to food to the Human Rights Council at the Sixteenth session of the UN General Assembly, 20 December 2010. United Nations, New York.

Duveskog, D. 2013. Farmer Field Schools as a transformative learning space in the rural African setting. Uppsala: Swedish University of Agricultural Sciences, Acta Universitatis agriculturae Sueciae, 1652-6880; 2013:47

FAO, 2015. Agroecology for Food Security and Nutrition. Proceedings of the FAO International Symposium, 18–19 September 2014, Rome, Italy

Foley, J. 2014. GMOs, silver bullets and the trap of reductionist thinking. Ensia, 25 February. http://ensia.com/voices/gmos-silver-bullets-and-the-trap-of-reductionist-thinking/

IAASTD, 2009. Agriculture at a Crossroads – International assessment of agricultural knowledge, science and technology for development: Executive summary of the Synthesis Report.

SIANI, 2015. How to feed nine billion within the planet's boundaries: The need for an agroecological approach. Policy Brief by SIANI's Expert Group on Agriculture Transformation in Low-Income Countries.

UNCTAD, 2013. Trade and Environment Review – Wake Up Before It Is Too Late, UNCTAD.

Wigboldus, S.A. and Leeuwis, C. 2013. Towards responsible scaling up and out in agricultural development: An exploration of concepts and principles. Discussion paper prepared for the CGIAR Research Program on Integrated Systems for the Humid Tropics.

This policy brief was prepared by the SIANI Expert Group on agriculture at the crossroads – agriculture transformation in low-income countries under the challenges of global environmental change.
Authors: Fredrik Moberg (editor), Karin Höök, Jakob Lundberg, Kristina Mastroianni, Louise Karlberg, Gunnar Rundgren, Lennart Salomonsson.
Input was received from participants in the workshop "Scaling up Strategies – from Technology Transfer to Empowerment", run by SIANI Expert Group on Agriculture Transformation in Low-Income Countries and SLU Global on 28–29 August 2014, Uppsala, Sweden.

SIANI Stockholm Environment Institute, Linnégatan 87D, Box 24218, Stockholm, 104 51, Sweden