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From 2017's forthcoming book,
*Fertile Ground:
Scaling Agroecology from the Ground Up*



From Oases to Landscapes of Success: Accelerating Agroecological Innovation in Burkina Faso

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groundswell
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The Association Nourrir Sans Détruire (ANSD, the Nourish Without Destroying Association) has been working with 125 villages in the Eastern Region of Burkina Faso to support a community-based, farmer-driven process of agroecological innovation and dissemination. Through field schools, exchanges, village-level action plans, and collaboration with many local leaders and government agencies, farmers and project collaborators have not only supported ongoing agroecological innovation, but found ways to spread innovation to an increasing number of farmers.

Like many of his neighbors, Souobou Tiguidanla works in precarious environmental conditions to sustain a large extended family on a small farm where he primarily grows maize, millet, and sorghum. “In 2010 and 2011,” Souobou recalls, “we were hungry. Rainfall was poor and we were not able to produce enough food for ourselves.” The family could not survive on their own stores and had to buy from the market, knowing that this expenditure would reduce their ability to invest in next year’s crops. “Something needed to change,” Souobou knew, so he sought out training in agroecology from a local organization, and gradually began to adapt new methods that were not only more productive and environmentally beneficial, but also less costly.

The Association Nourrir Sans Détruire (ANSD, Nourish Without Destroying Association)—an organization which one of us (Bourgou) directs and the other (Batta) co-founded and partners with—has worked to support agroecological adaptation and innovation in the Eastern Region of Burkina Faso. By encouraging experimentation, recognizing innovation, and prioritizing decentralized farmer-to-farmer learning, ANSD has found pathways to more ecologically and economically viable livelihoods.

Challenge: Oases of Success

The Eastern Region of Burkina Faso is one of its most economically marginalized areas, and recent studies have estimated that 43.9 percent of the population lives below the poverty line. People who live there are caught in a vicious cycle of degrading natural resources, declining soil fertility, decreasing food production, and hunger. Food shortages are frequent, particularly during the “lean season” between harvests, and—as is seen in Souobou’s case—are made worse by drought. To survive, many families skip meals. The poorest 30 percent of smallholder farmers often sell their animals and other household assets during these periods in order to buy food from local markets. When they don’t have anything to sell, they obtain high-interest loans

“The challenges we face are that the rain is insufficient and the soil is declining. Since the soil fertility has declined, the production has also declined. We don’t have as many crops as in the past. There are 11 people in my household. Of course we are worried. If you’re responsible for others and you don’t have enough to eat, you’re very worried.”

-Adjima Thiombiano, Gayéri Village farmer

from moneylenders. This asset stripping leaves households even more vulnerable for the next lean season or drought. Most of the rural population of eastern Burkina Faso, as is also true in other parts of the Sahel, is unable to farm their way out of this vicious cycle by relying on practices (such as fallowing) that had worked in the past.

In this challenging context, farmers, local NGOs, and agricultural researchers in Burkina Faso have developed a variety of viable solutions. Over the last 30 years, they have tested and adapted a number of effective agroecological farming practices—some new, others traditional—that have proven capable of restoring soil fertility and increasing food production for smallholder farmers. These practices include soil and water conservation techniques that build on traditional practices such as “zai” and “half-moon” micro-water catchment planting pits and permeable rock contour barriers, the use of compost to increase organic matter in soils, and the promotion of “farmer managed natural regeneration” (FMNR) of trees. FMNR is an agroforestry approach in which, instead of clearing trees, farmers allow them to regenerate on their farms from existing stumps and roots, pruning the shoots and integrating the trees into their farming systems in a way that restores soil fertility and productivity. Some farm families have also adopted the use of short-cycle seeds to cope with irregular rainfall.

Although very effective, these approaches are currently only adopted on a limited basis. The farmers who do use them represent “oases of success” in a wider landscape of struggle. A much more dramatic and rapid spread of agroecology is essential to reverse the alarming degradation of soils and natural resources, regenerate productivity, and



A girl from Bassieri shows her agroecologically produced carrots.

reduce poverty, vulnerability, and chronic hunger for peasant communities while creating greater well-being.

Starting with Farmer Innovations

Mariam Ouango, a 57-year-old farmer and mother of six from the village of Tibga, has found an unusual way to increase crop production without using chemical fertilizers. In addition to farming and keeping livestock, Mariam also processes value-added products, such as shea butter. For many years, she struggled with raising tomatoes, which often ended up “burned” from limited rainfall and the harsh impacts of chemical fertilizers. One day, Mariam happened to notice that the land where she poured out the remains from her shea butter extraction process appeared to be less compact, more moist, and undamaged by termites and other insects. She sensed an opportunity, and began to experiment with spreading shea butter liquid in her garden in place of chemical fertilizers. The resulting tomato plants were twice as tall and productive. The new technique has had wonderful results for Mariam and her family. She is proud of her innovation, and motivated to continue experimenting with other agroecological strategies. So far, her innovation has yet to spread to other farmers. One limitation is that

most farmers do not have access to shea butter extract. To determine if agricultural programs should focus on improving access and disseminating this technique, it will be important to carry out further research to verify the impact of using shea butter as a soil amendment.

Response: Scaling-up to Landscapes of Success

ANSD’s broad mission is to strengthen rural communities to overcome hunger and promote socio-economic development. In 2010, we initiated a new program in the eastern region of Burkina Faso to build on past work. This program promotes community-based agricultural development through agroecology in three districts that together have a total of 125 villages: Bilanga, Gayéri, and Tibga.

As Fatoumata Batta (ANSD co-founder and co-author of this article) described in a report to Groundswell International:

When we started working in 2010, we realized there were farmer innovations that showed that agroecological practices were effective under even extreme conditions like those of eastern Burkina Faso, but they just were not spreading quickly enough to make a difference. We knew we had to find a way to ‘scale out’ agroecology. So we went to the villages

and facilitated a number of discussions with farmers to understand why things moved so slowly. Villagers understood the problem very clearly. They said that while some had heard of these agroecological innovations, most farmers hadn't seen them or did not know a lot about them. There were almost no extension services supporting peasant farmers to learn about these alternatives. In general the government focuses on larger-scale farmers producing export crops, providing conventional inputs, and doesn't focus on small-scale farmers or sustainable approaches. Farmers analyzed that from their side, their communities generally lacked the organizational capacity to spearhead the promotion and spread of these strategies themselves. High levels of illiteracy also made this a challenge.

We decided that we would work to support farmer experimentation with promising agroecological practices, and farmer-to-farmer spread of those practices. In addition to technical skills, this would also mean strengthening the organizational skills of the village organizations to lead the process. We made a commitment to prioritize the involvement of women leaders and women's groups with targeted strategies that made it easier for them to participate and benefit. We also planned to systematically strengthen the capacity of community organizations to create networks for sharing knowledge and effective

practices across many villages, to better access local markets, and to contribute to policies supporting food sovereignty.¹

Agroecological Depth: Drilling Down with Farmer Knowledge

Farmers tend to listen to other farmers living in the same conditions—especially if they see things that are working. Therefore, ANSD organized learning visits for village farmer organization leaders, local government and ministry officials, and religious and traditional leaders to see successful agroecological techniques practiced by innovative farmers.

Groups of farmers interested in trying new agroecological techniques were formed. ANSD facilitated participatory organizational self-assessments with farmers' groups and followed up with appropriate support. This led to community members gradually establishing village agricultural committees in all of the 60 villages. One criterion of the committees was to ensure they had diverse representation in relation to gender, economic status, age, and traditional as well as religious organizations. These committees built their organizational capacity to take on the analysis, planning, awareness-raising, farmer-to-farmer coordination, and the monitoring and assessment of the agroecological sharing process.

Through this process, we chose “foundational” agroecology innovations: zai planting pits, stone contour bunds, half-moon water catchment areas, and



Women in Bilanga-Yaga creating zai planting pits.



ANSD animator demonstrating how to use the A-frame to create contour barriers for soil and water conservation.

FMNR/agroforestry to form the basis for the farmer-to-farmer technical and practical training given to the growing groups of farmers interested in agroecology.

Agroecological practices spread beyond the participants of initial trainings through farm visits and experiments. To accelerate this spread, we created a plan to combine geographically dispersed pilot villages with farmer-to-farmer training. The village agricultural committees recruited an extensive, decentralized network of volunteer farmer leaders (both women and men) to teach others. These volunteers were selected based on their own interest and practice of agroecology, a desire to teach others, and geographic distribution to cover all communities. These volunteers are all part of a decentralized “cascading” approach to farmer-to-farmer training, organizing experimental plots in various villages to test the agroecological practices. When these farmer-volunteers were convinced of the efficacy of agroecological practices on their own farms, the village agricultural committees organized field days so that other farmers within village clusters could visit and learn from these experiments.

Additionally, farmer leaders worked with ANSD to develop community radio programs to share the benefits of specific agroecological techniques through

local language broadcasts. They produced videos documenting local farmers’ experiences to share them with other farmers and villages. Bourgou reported:

This is all part of our effort to work with farmers to generate, document, and disseminate knowledge in a vibrant and interactive way. At ANSD we complement community-led monitoring and evaluation with additional evaluation processes for program learning and to evidence generation. This information—and the information from our own, internal evaluations—contributes to the reports, videos, photos, case studies, and human-interest stories that we disseminate locally and internationally for use in promoting agroecology.²

Vertical Spread: Creating an Enabling Political and Social Context for Agroecology

Program participants first influenced the plans, budgets, and development priorities of local and regional governments and ministries. Most people in

these agencies have a limited knowledge of agroecology. Involving them in the learning processes in rural communities helps develop a shared understanding and appreciation of agroecology and the farmer-to-farmer approach. Many become allies.

Results: Increased Agroecological Innovation and Adoption

After Souobou (the farmer described at the beginning of this article) attended an agroecological training event, he began to experiment with new practices on his farm. “I built stone contours on my fields,” he said. “This keeps the rainwater from flowing away. We also started to make compost with crop residues and cow manure.” As a result, his soil is more moist and fertile, and his yields have increased by over 100 percent in just one year. Souobou was the first farmer to adopt these particular agroecological practices in his village, but he will not be the only one. “My children are already learning to use the new practices and I am ready to teach others too,” he said.

ANSD began its work in 2010 in only ten villages, but through the interest and efforts of farmers like Souobou, it has expanded to 60 villages. Much of this success has been made possible by offering extensive opportunities in decentralized farmer experimentation and horizontal knowledge transfer. The project has reached many people: between 2014 and 2015, a total of 221 farmer field schools were organized with over 2,500 farmer-trainers trained, most of them women. Thanks to the work of these farmer-trainers, a total of 2,945 households had adopted agroforestry (FMNR) and related agroecological techniques (zai planting pits, contour rock bunds, organic manure, etc.) by mid-2015. Other villagers then visited and learned from these farmers through organized field days. These events trained over 1,000 men and women across the 60 villages who act as volunteer promoters, providing agroecological training and follow-up support to farmers who are new to agroecology.

Through this farmer-to-farmer process, the program has been highly successful in creating a diverse base of agroecological farmers, leaders, and thinkers. After starting with the original farmer experimentation and farmer field schools, from 2010 to 2014 a total of 16,325 farmers, including 8,498 women, have participated in learning activities to gain a much deeper understanding of agroecological strategies and are starting to adopt key agroecological practices.

Additionally, farmers are experimenting with their own innovations and beginning to share these with others. Creating this sort of continuous, farmer-led

process of agricultural innovation is one of the end goals of the project. Tani Lankoandé from Sagadou provides a perfect example. She took it upon herself to find new ways to increase agricultural production in the face of climate change. “It started off with a simple observation,” she says. She saw that when fallen leaves from nearby trees are transported by rainfall to areas of the field, the soil becomes richer. “These leaves decompose into humus and make the land fertile and arable,” she explains. “So I would collect these dead leaves and put them into small piles throughout my farm, while making sure to add ash. Ash prevents termites from attacking the piles of leaves and the Harmattan winds from blowing the leaves away.”

After testing this method out on part of her land and comparing it to another control area, Tani confirmed the usefulness of the practice. ANSD supported Tani in carrying out additional experiments and introduced her to researchers from INERA. She takes pride in the fact that many other farmers in the village have now also adopted the practice. What’s best, she says, is that these techniques can be adopted by farmers without the economic resources to invest in new inputs or tools.

A survey of 64 farmer field schools in 2014 revealed that yields of basic crops produced under agroecological conditions increased by 40-300 percent compared to control plots. Based on these successes, farmers want to expand their use of and experimentation with different agroecological techniques. This is important because in the Sahel, there is no one single agroecological technique that, by itself, can reverse soil degradation and declining productivity. Transforming the traditional farm into a highly diversified, sustainable, and climate-resilient system will require a process of ongoing agroecological innovation in which households progressively learn and adopt a growing range of agroecological practices. Farmers that are convinced of agroecology’s efficacy will be motivated to continue with experimentation and implementation, making the process of agroecological innovation sustainable into the future.

Kiribamba Pakouma, an Example of Women’s Leadership in Agroecology

Because of the project, many more women have also become involved in dry season vegetable gardening for both consumption and sale, as well as implementing improved livestock practices. Additionally, they’re using simple methods to process

produce for storage and sale (such as through solar drying), and have formed savings and credit groups to support these efforts. Kiribamba Pakouma, for instance, took up vegetable gardening after participating in an ANSD training session. She is part of a women's group whose members support each other with savings and collective work on each other's plots. They also exchange agroecological advice. Kiribamba started by investing only 1,000 CFA (US\$2) in seeds and inputs, and with the help of resources provided by the women's group, she now provides much of her family's food. In the last season she donated 20 percent of her surplus to other families and sold the rest for US\$60—enough to reinvest in the farm and pay off some of her children's school fees. "I am proud to contribute financially to my household's expenses," she says.

Moving forward: Trust the Process, Build Capacity, Enable Environments

The most critical point to the ANSD approach to scaling agroecology is that it does not involve the transfer of pre-determined packages of technologies. Instead, ANSD works with farmers to identify a "basket" of potential innovations, fosters farmer experimentation and exchange, and enables each household to apply the combination of agroecology practices that best suits their circumstances. Through this collaboration, ANSD creates an improved process for accelerating agroecological innovation and creating positive synergies. This process has the potential to help the local population reverse the vicious cycle of declining soil fertility and food production, and to regenerate farms and improve families' wellbeing on a regional scale.

Batta reflects:

This program has shown the importance of focusing not just on technical work, but also on a scaling strategy, and advocacy, and efforts to create an enabling environment for agroecology. In the process, ANSD has seen the importance of selecting pilot villages, of supporting ongoing farmer experimentation, and in achieving early wins in order to create enthusiasm. Working with "foundational" agroecological techniques that can allow for the sequential and combined adoption of other techniques in order to continuously "deepen" agroecological understanding and practices has been key—so has the geographic

spread and expansion outward to new areas. We knew from the outset that it is important to focus on women's capacity-building in agriculture and create diverse alliances. This has proved essential.³

As the project moves forward, ANSD continues to work with farmers and community organizations to eventually reach all 125 villages in the area. While we have already witnessed significant tangible change, we estimate that it will take between six and ten more years to truly create widespread, sustainable farming systems at the level of the three districts. Each new wave of agroecological innovations can build on the previous ones, as long as there is strong social organization in place to lead the process. Farmers have identified increased livestock farming integration and improved biological pest management as next steps for their agroecological innovation.

Farmers like Souobou, profiled in the opening of this article, have already made great achievements in their first few years experimenting with and spreading agroecological practices, but they are not content to stop there. Souobou strives not only to increase current productivity, but also to make his farm resilient in the face of climate change and to teach agroecological approaches to others. "In 2013, when rainfall was scarce, many farmers growing maize had very poor harvests," he explains:

I was one of the few farmers with a good maize harvest. I was able to help neighbors and family with food during the lean season. Before adopting the agroecological techniques, I cultivated six hectares. Now I am producing twice as much food, but I only cultivate about four hectares. I have many plans to improve my farm. I am already expanding the stone contour bunds to cover more of my farm. I am also beginning to implement the zai technique (micro-water catchments). I will invest in some small tools, like a cart to move stones, and will invest in more livestock for manure composting. These agroecological practices are highly relevant. I am proud that I have learned them, and I am ready to help other relatives and members of my village who are ready to learn.⁴

Endnotes:

1 Batta, Fatoumata. Internal Project Report to Groundswell International, 2015.

2 Ibid.

3 Batta. Internal Project Report.

4 Tiguidanlam, Souobou. Interview by Tsuamba Bourgou, June 2014.