

RURAL

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Multi-stakeholders for better food systems

RURAL DEVELOPMENT IN AFRICA

Divorced from reality?
A riposte from German NGOs

INDIA

A helpline to fight farmer
suicides

CAMEROON

Stimulating endogenous
growth in rural communities

Dear Readers,

Like ants scurrying around on the floor – the more globalisation moves forward, the more complex the interplay between different stakeholders becomes. Sustainable Development Goal 17 is dedicated to partnerships for the goals to harmonise and plan interaction among multi-stakeholders together.

But what does this mean for the agricultural and food sector in rural areas in particular? A food system comprises not only traditional value chains, but also consumption and the environment. This calls for concerted action among governments, the private sector and civil society to achieve a sustainable and healthy food system, including its value chains, while considering the different conflicts of interest among the parties involved. In order to understand each other, a common language should be created. This can be achieved through standards and certifications, but also through clearly formulated agreements such as in contract farming.

Over the last decades, products produced under labour and social standards or certified by sustainability standards such as Fairtrade or organic standards have come into play and are more popular with the consumer side. But who benefits from this? Is it the small-scale farmers, who have to adapt their production, increase their income and yields, reduce health and environmental risks caused by inappropriate farming practices and enhance nutrition diversity on their own plate while creating traceability and transparency at the same time?

This edition gives special emphasis to this complexity of actors and their interests to work together, sometimes even at inter-sector level. There is no one-size-fits-all approach, for local circumstances play an important role. We have chosen examples of typical interactions in food systems either to show who is involved in a particular case and what the outcome is – the added value of the common action – or to point out advantages and disadvantages of all actors involved and their incentive to participate in a specific step in the value chain.

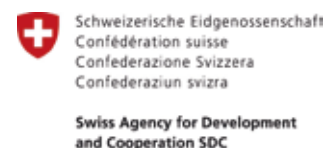
We wish you inspiring reading.

Sincerely yours,

Daniela Böhm



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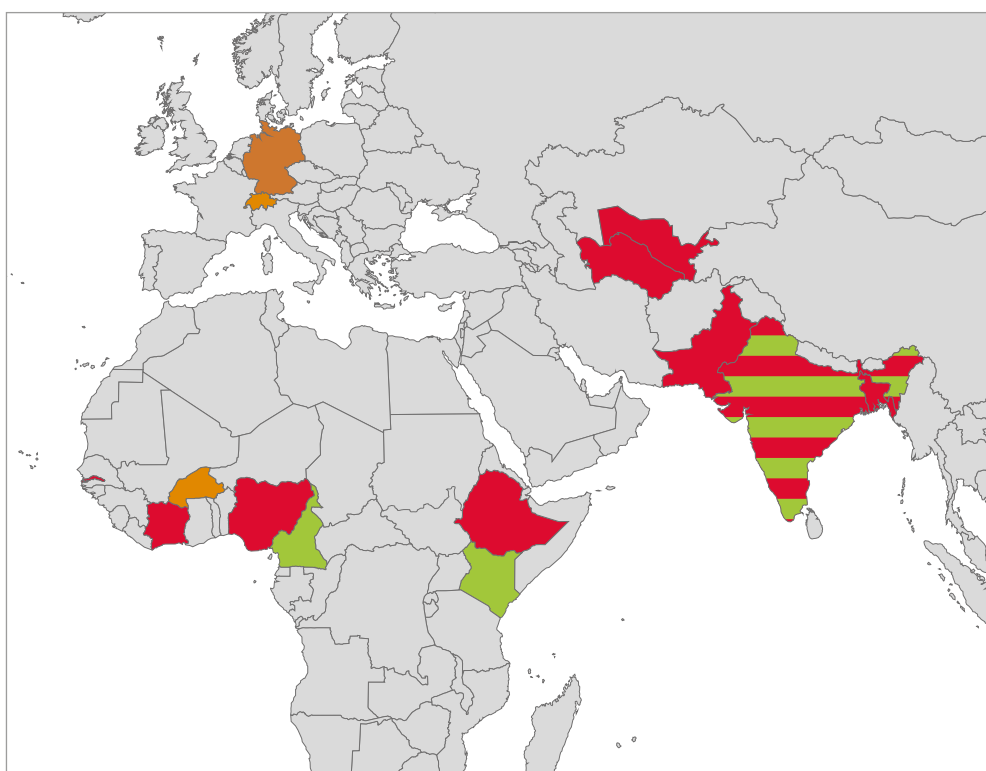
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The CITES Conference – strengthening international trade regime for wildlife

The triennial World Wildlife Conference, CoP18 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) took place from the 17th to the 28th of August 2019, in Geneva, Switzerland. CoP18 was attended by 169 member governments (plus the EU) and some 1,700 participants. The Conference revised the trade rules for several wildlife species that are threatened by unsustainable trade linked to overharvesting, overfishing or overhunting. These ranged from commercially valuable fish and trees through mammals to amphibians and reptiles sold as exotic pets. “Business as usual is no longer an option. CITES conserves our natural world by ensuring that international trade in wild plants and animals is legal, sustainable and traceable,” said CITES Secretary-General Iyovonne Higuero. According to the International Institute for Sustainable Development, delegates noted a “bittersweet” nature of achieving listings of increasingly threatened species. Others regretted “deepening divisions” between conservation and development agendas in Africa.

Wildlife conservation and indigenous people

Many countries lack the necessary financial and institutional capacity to sustainably manage and conserve their wildlife. The Conference took decisions promoting capacity building and other activities aimed at strengthening wildlife management and compliance with and enforcement of trade rules. In addition, the critical role of local and indigenous communities that live on the frontlines of wildlife conservation and sustainable management and their need for adequate incomes and livelihoods was widely recognised. Faced with a

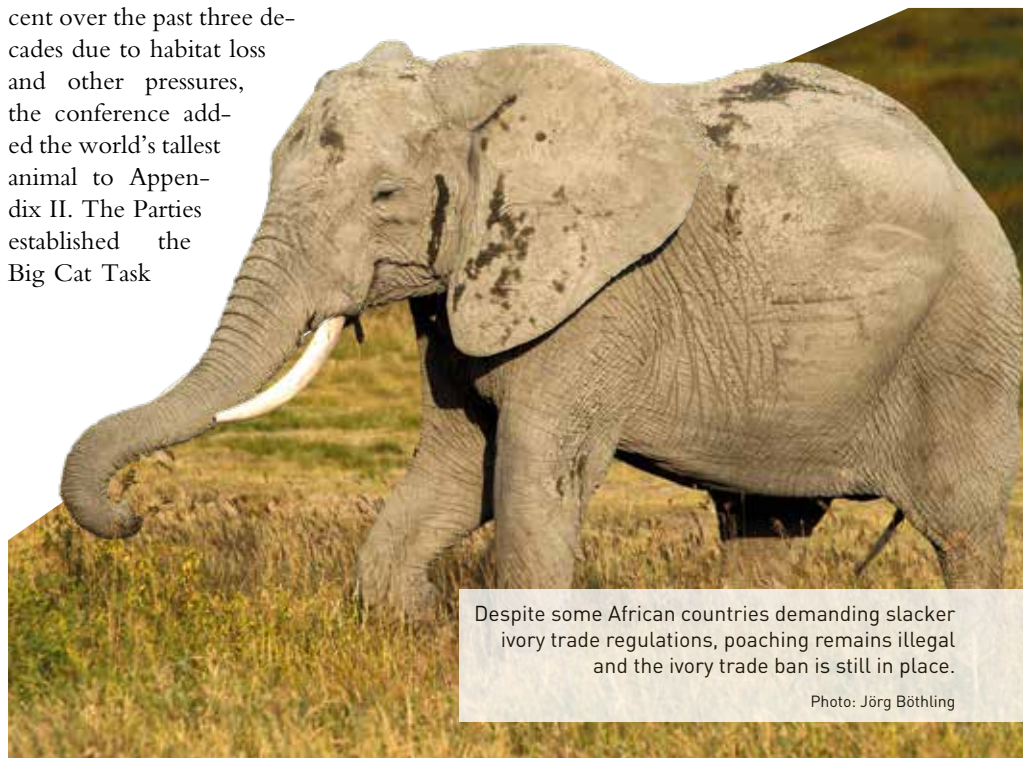
wide range of differing views, the conference asked Parties to begin considering how to best engage indigenous peoples and local communities in decision-making and implementation. The aim is to better achieve the objectives of the Convention while recognising those people whose use of CITES-listed species significantly contributes to their livelihoods.

Mammals and the burning ivory issue

Asia’s smooth-coated and small-clawed otters, threatened by habitat loss and possibly by trade in live animals, were transferred from Appendix II to Appendix I, which prohibits all commercial trade in the species that it lists. Noting that giraffes had declined by around 40 per cent over the past three decades due to habitat loss and other pressures, the conference added the world’s tallest animal to Appendix II. The Parties established the Big Cat Task

Force with a mandate to improve enforcement, tackle illegal trade and promote collaboration on conserving tigers, lions, cheetahs, jaguars and leopards.

The conference reviewed the measures for the export of live African elephants to “appropriate and acceptable destinations”, whereby exports outside their natural range will be permitted in “exceptional circumstances” only, in consultation with relevant CITES and IUCN bodies, and only if they provide “in situ conservation benefits”. Furthermore, the decision-makers did not accept proposals to permit some limited trade in ivory from African elephants, which means that the existing trade ban remains in place. (db)



Despite some African countries demanding slacker ivory trade regulations, poaching remains illegal and the ivory trade ban is still in place.

Photo: Jörg Böhling

How tropical forests can save the climate and fight hunger

The German Federal Ministry for Economic Cooperation and Development (BMZ) together with the World Future Council invited to the innovation dialogue entitled “Forests for future – how tropical forests can fight hunger and save the climate” on the 15th of August 2019 in Hamburg, Germany. The innovation dialogues are a series of events run un-

der the umbrella of the special initiative “One World No Hunger” (SEWOH). Looking at the burning Amazon and Tundra, net deforestation still goes on and diminishes the global carbon sink, releasing huge amounts of stored carbon into the atmosphere. And even though the world is wasting 30 per cent of food produce through inappropriate farming practices

and storage before it reaches our plates, illegal logging for arable land still goes on. The conflict over land between food production and forest conservation calls for action. In 2019, Ethiopia planted 350 million trees, beating India’s world record of 60 million in 2017. But this is sadly only a drop in the ocean. Saving forests is a complex challenge. Nowadays

more than 1.6 billion people depend on forest resources. Not only does this include timber for construction purposes and firewood, but it also implies non-timber forest resources for food and feed and medicinal proposes. With a growing population, especially in Africa, pressure on resources will increase during the next decades. Christoph Heinrich of the World Wildlife Fund for Nature (WWF) maintains that forest and biodiversity always go hand in hand since 80 per cent of the living organisms are found terrestrial in forests, living in the soil and flora below the canopy of the trees. Heinrich stressed that resources were limited and that if their present use continued, they were “only protectable when we make use of DNA strings in the near future”. Forests also offer shade and regulate water storage for entire watersheds, among other ecosystem services and functions. Gunther Beger the BMZ explained

that thanks to his ministry’s efforts in Tigray in Ethiopia, starting in 1993, soil degradation could be stopped and the land was re-fertilised with specific soil and water protecting measures, reducing pressure on intact forests about to be cleared for agricultural proposes. Moreover, the introduction of solar cookers in Ethiopia and elsewhere minimised the need for charcoal and firewood in rural areas, Beger furthered.

The African Forest Landscape Restoration Initiative

The African Forest Landscape Restoration Initiative (AFR100) is a joint agreement of more than ten African countries targeting to restore 100 million ha of the continent’s land by 2030. The biggest challenge was political commit-

ment over such a long period, with changing heads of state in many countries. “We have to take leadership and ensure a long-term financing through the Green Climate Fund and other measures such as Reducing Emissions from Deforestation and forest Degradation (REDD),” stated Wanjira Mathai of the Greenbelt Movement, Wangari Maathai Foundation and World Future Council. “It is a long-term and expensive restoration effort, especially when it comes to restoring degraded wetlands. You need people on the ground and have to create opportunities for the youth in the forest environment – a mindset change facing the same challenges like in agriculture. Forest management is also a rural and not an urban activity and still less attractive to work in.” Beger noted that the BMZ was providing two billion euros a year for forest conservation world-wide. Daniela Böhm

Desertif’actions 2019 – land, biodiversity and climate

The fourth International Civil Society Summit “Désertif’actions” took place in Ouagadougou, Burkina Faso, from the 19th to the 22nd of June 2019. More than 380 participants coming from more than 40 countries and representing 240 organisations attended the event. Désertif’actions is a summit focusing on three main themes with regard to desertification – land, biodiversity and climate. In general, the event invites international actors

involved in the fight against desertification to meet every two years. This time, the summit was organised by the French association Centre d’Actions et de Réalisations Internationales – CARI (the NGO which had initiated the event in 2006) and the association’s platform Secrétariat Permanent des Organisations Non Gouvernementales – SPONG (Burkina Faso), supported by the United Nation’s Convention to Combat Desertification (UNCCD).

The event was held on the African continent for the very first time – in Burkina Faso, where, according to SPONG, “19 per cent of the national territory’s land is degraded, and which lost 2.4 million hectares of woods, leaving the land transformed into a savannah landscape in only eleven years”. This situation reflects the reality of the Sahelian countries, and more broadly the rapid progression of land degradation across the world.

Contributing to land degradation neutrality

In face of the negotiations of the 14th Conference of the Parties (COP14) to the UNCCD in New Delhi, India, in September 2019, the participants demanded to have a say in decision-making. Particular emphasis is given to the challenges in achieving land degradation neutrality (LDN). LDN is specified by Target 15.3 of the Sustainable Development Goals with its tripod “avoid, reduce and restore” in order to keep all ecosystems intact.

In a Call to Action they furthered that their contributions during the COP14 and beyond would go to the earth-biodiversity-climate link, to the earth-renewable energies link, to the rural-urban link and to the earth-health link. For the first time, civil society explicitly carried land tenure-related discussions into the official agenda of the upcoming Conference of the Parties to Combat Desertification. (db)



Photo: Joanna B. Pinneo/Aurora/iaif

TALKING ABOUT FOOD SYSTEMS

A paradigm shift?

Food systems rely on intact ecosystems, clear regulations and legal frameworks from farm to fork.

Linking producers with consumers for healthy diets is the backbone of a sustainable and viable market system from local to global level. But what kinds of actors are involved and in what way? Our author depicts the challenges and requirements of their interaction in this context.

By Joachim von Braun

Reaching the target of zero hunger by 2030 seems to be more challenging today than it was in 2015, when the Agenda for Sustainable Development was adopted. In fact, the number of people suffering from hunger has not declined but increased over the last four years. Whereas hunger is highly correlated with poverty, the problem is not limited to low-income countries; a significant proportion of households in middle- and high-income economies lack access to sufficient or healthy food. Poor diets are an increasing concern, too. They are responsible for one in five deaths among adults, more than any other risk factor, and they put a critical social and economic burden especially on vulnerable populations.

Food systems need to be clearly conceptualised

Food systems currently fail many people and ecologies. It is often neglected that a (food) “system” defined without its boundaries is just a fuzzy term without any conceptual meaning. To understand food systems and their failures, we first need to be clear about system boundaries and spatial dimensions – i.e. global, regional, national and local. A global perspective is useful, one example being that taken by the “Planetary Boundaries” approach, which tries to define a safe operating space for humanity within environmental boundaries in the context of Earth system processes. But this approach does not guarantee sustainable food systems, because whereas planetary boundaries may not be violated, major regional and local





ecologies are being destroyed and nutrition for large parts of the world population remains insufficient. Rather, a disaggregated approach to social and environmental impact assessments is needed. Moreover, within the food system, we need to look into the entire range of actions and actors involved in the production, aggregation, processing, distribution, consumption and disposal of food products, their interconnected activities and their linkages with economic, social and natural environments. Food systems approaches consider issues pertaining both to sustainable production and sustainable consumption, to delivering healthy and nutritious diets with minimal environmental impact. The food systems approach is different from traditional food and agriculture sector analyses or value chain concepts. It is a paradigm shift.

Challenges and opportunities in modern food systems

Food systems are exposed to multiple challenges, including demographic pressure, shifting consumption patterns, climate change, environmental degradation and agricultural policies that distort international trade in food products. At the same time, well-designed food systems present many opportunities for their actors, for instance expanding markets, a widening of food choices, increasing the importance of food quality and food safety in the production process and the expansion of off-farm employment for local populations. However, in order to both deal with existing challenges and take advantage of new opportunities, food systems require a fundamental change, especially in terms of investment, research and innovation, standard setting and preservation of natural resources. The global scale of these issues, particularly in terms of climate impacts and food safety, does not permit fragmented initiatives of various actors to come up with sustainable solutions. Stakeholder cooperation is necessary; this cannot just be based on good will, but requires governance of incentives and regulations.

Towards multi-stakeholder action for sustainable food systems

A concerted action of relevant stakeholders is required to reach the scale and momentum necessary for inducing large-scale change and impact. Multi-stakeholder platforms (MSPs) are a means of implementation of the Sustainable Development Goals (SDG), as emphasised in SDG17 – partnerships for the goals. Indeed, by bringing together various stakeholders with

even conflicting interests, MSPs can be a forum for consultations and, as such, they have the potential to overcome conflict and create synergies. The economic rationale for MSPs is also to correct for market failures in food systems, including power and information asymmetries, environmental and health externalities and suboptimal allocation of resources leading to inequalities in food and nutrition security.

MSPs may enhance the delivery of public goods – and certainly, since many of the challenges and factors related to food systems, including food security itself, present public goods aspects, they require collective action and coordination. In this regard, MSPs have various functions, ranging from resource mobilisation, knowledge generation and sharing, capacity building and standard setting to the actual implementation of policies. Broadly speaking, MSPs play an important role in pooling any types of resources that are either necessary or helpful in solving global, regional or local food system problems.

Financing food systems

Mobilising financial resources and enhancing investment is a particularly important case for MSPs in food systems across the world, but particularly so in low-income countries, especially in Africa, where the financing gap is still staggering. Research by the Center for Development Research (ZEF) in Bonn, Germany, has demonstrated that foreign direct investments in the African food and agriculture sector amounted to about USD 48 billion between 2003 and 2017. The analysis also shows increased dynamism in investments for food and agriculture in Africa. MSPs can help not only to mobilise new resources, especially from the private sector, but also to reallocate existing resources more appropriately and target them towards food and nutrition security.

Multi-stakeholder platform effectiveness depends on design and context. MSPs can be a potentially powerful tool in addressing food system functioning.

The diversity of actors in the food systems and the complex interactions between them call for a high level of inclusiveness if the interests of all relevant groups are to be covered. At least three clusters of groups of actors are to be considered: the public sector (government), the private sector (small and large scale enterprises) and civil society representing consumers and their interests such as initiatives to improve nutrition as well as the environment.

Engaging governments, private sector and civil society

Governments should adopt a four-part approach: treatment, prevention, promotion and regulation. It is important for governments to engage in basic responsibilities and public goods related to the functioning of food systems. These include information and monitoring, regulating business activities, trade policy, food safety and investments in research and development in the food and agriculture sector. Governments need to consider accountability and transparency within each multi-stakeholder initiative. Affordable and sustainable food safety systems need to place great emphasis on incentivising and facilitating farm and food business compliance via regulations and safe operating practices as well as greater public accountability mechanisms. These functions are highlighted in recommendations based on a recent international conference on food safety and healthy diets by the Pontifical Academy of Sciences and the Global Alliance for Improved Nutrition (GAIN) in the Vatican in 2018.

MSPs should mainly be a matter of private sector actors, not of government. The private sector actors include the food outlets, retail industry, food processing and increasingly also the related logistics and information service industries.

Being part of the private sector, farmers, through their organisations, need to be directly involved in MSP processes, as their role in the proper functioning of food systems is fundamental. Often, farmer organisations are not considered a partner, because in emerging economies, farmer organisations are frequently not strong or partly depend on the government. The discourse on farmers needs to change in such a way that they are considered as entrepreneurs rather than as subsistence producers who are unable to influence the food system processes.

Civil society groups – locally and internationally – can play an essential role in empowering and representing the interests of marginalised or vulnerable communities by monitoring market actors and mitigating detrimental impacts. To increase their negotiating power, civil society groups need to boost cooperation and coordination amongst their own actors who, on their own, are not able to attain scale and impact of their actions. This will also prevent a patchwork of isolated, small-scale initiatives. Instead, it ensures comprehensive change, especially if collaboration with governments and other partners is enhanced in



Soil erosion in Burkina Faso caused by climate change and inappropriate agricultural practices results in less arable land for food production.

Photo: Bettina Flitner/laif

parallel. The inclusion of marginalised groups is crucial to achieving equity and justice in providing results and to avoiding potential negative distributional consequences of actions undertaken within MSPs. Otherwise, there is a risk that MSPs might reinforce existing power asymmetries between various stakeholders, in particular between the private sector and local communities and populations, but also within the different actors of the private sector itself, especially in places where micro and small businesses are under-represented – in favour of multinational companies.

In addition to that, the contribution of the research community should not be undervalued. Research can play an important role in generating knowledge, providing evidence and monitoring, and advising all stakeholders on how to achieve the desired objectives within MSPs. The InterAcademy Partnership (IAP), which brings together 140 national and regional academies from around the world, recently offered an interesting model to facilitate research and evidence-based policy engagement across borders and disciplines. The IAP has developed a common food systems approach to assess the situation with respect to food and nutrition security and sustainable agriculture, as well as linkages to health and environmental issues, thus identifying knowledge and regulatory gaps, and prioritising the policy actions needed through multi-stakeholder

consultation in the different hemispheres and at global level.

Efficient platforms are the ones that have inclusive bottom-up processes, but where governments facilitate actions by creating sound frameworks and providing related public goods, such as information, food safety, or environmental and social standards. Such a combined bottom-up/top-down approach seems to be the most promising one, since besides aiming at a common overarching objective, all groups of stakeholders are motivated by their own specific goals and interests.

Multi-stakeholder cooperation by combined public and collective action

MSPs need leadership as well as participation. These can be conflicting features and root causes of failure. Moreover, MSPs with accountability, transparency and inclusiveness as discussed above are not free of charge, yet their costs should be regarded as an investment in sustainable food systems. Thus, cost/benefit considerations make more sense than just stressing simplistic concerns about expensive MSPs. It would be wishful thinking to assume that all the stakeholders that should participate can be easily convinced to appropriately share in the costs of MSP. Free riding on the expected benefits of MSP is a problem. To overcome

that constraint, public action by governments is required, as well as collective action by sub-groups of partners. Research for instance by Ostrom has identified the tremendous opportunities of collective action to deal with complex economic systems. As food systems are such complex systems, this crucial role of collective action applies to them as well. Multi-stakeholder initiatives are inherently transaction cost-intensive since decision-making at multiple levels can be very demanding in terms of effort, time and financial means. Therefore, it is crucial for all stakeholders in MSPs, but in particular for governments that coordinate such processes, to design frameworks and conditions that will combine public policy actions with collective actions, in order to reach high benefits with minimum costs through optimal institutional designs and functioning. This volume of Rural 21 provides new insights on the related “how to”.

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For more information, see online version of this article at: www.rural21.com



An auditor in a sugarcane field inspecting compliance with Bonsucro standards.

Photo: Joe Woodruff/Bonsucro

Sustainability standards, traceability and certification

Voluntary sustainability standards and certification systems alone cannot reach all the world's poor. Effective standards require critical enabling conditions, such as access to resources and finance. Organisations and institutions are now collaborating to boost the impact of standards and are improving the coordination of actors in food systems.

By Norma Tregurtha

Over the last 20 years, sustainability standards and certification systems have become important players in the global food system. Voluntary standards such as Fairtrade, Rainforest Alliance and the Roundtable on Sustainable Palm Oil (RSPO) are increasingly mainstream in certain markets and sectors, and the range and volume of certified products continues to grow year on year.

While the objectives and approaches of different agricultural standards and certification systems can vary, credible schemes share certain key characteristics. They are run by independent organisations that ensure compliance and maintain integrity of the system. They promote good practices on the ground to benefit people and the environment, and they monitor and measure their impacts to ensure that they achieve these outcomes. They offer market incentives to certified producers, while providing assurance to buyers through independent, robust verification and traceability systems. They enable businesses and consumers to play their part in supporting the transition to a more ethical, equitable and sustainable food system. Importantly, standards also

help to bring together stakeholders and create a common language and a shared vision of what sustainable production and consumption looks like.

What is the evidence on the impact of standards?

The big question though, is, do standards systems make a difference? And what is their impact? Until recently, the evidence was sparse and anecdotal. But this is changing, with the number of studies increasing each year and standards becoming more systematic in collecting and sharing data on their impacts.

For instance, one research study conducted by the UK's School of Oriental and African Studies (SOAS) found more than 40 robust impact evaluations and 140 other empirical studies published over the last two decades that primarily focus on agricultural standards and look at themes such as profitability, yield, good production practices and biodiversity. And this growing body of evidence shows that standards systems can and do have positive im-

pacts – including preventing the worst practices, improving profitability for smallholders and conserving tree cover.

But, it's complicated. Differing contexts and geographies, variations in study aims and designs, data gaps and the complexity of the issues make it hard to synthesise simple conclusions or give clear yes/no answers. While a sizeable number of studies show that certified farmers earn a higher income for their certified crops than non-certified farmers, relatively few have found a significant difference when it comes to overall household income, for example, looking beyond income from sales of the certified crop to all income sources. More credible information and evidence needs to be collected and made available to guide better decision-making on sustainability issues in the food system.

The impact on smallholders is a particularly important area to address. The world's poorest are hard to reach, and voluntary standards are often unable to reach all smallholders in all places. To a large extent, the effectiveness of standards depends on having enabling condi-

tions in place. These conditions, such as the presence of formal land titles and access to resources and finance, are critical. This is something that standards organisations cannot tackle alone.

Standards and government action on sustainability

A key factor in determining how well sustainability standards can be adopted is the legislation and government policy in a given country. Voluntary standards systems are sometimes seen as replacing or competing with public regulation. In reality, to achieve sustainability impacts, governmental action and voluntary sustainability standards work best in tandem. As compliance with the law is a key principle in voluntary standards, they can reinforce regulations, particularly in contexts where state laws are poorly enforced. On the other hand, voluntary standards don't replace the need for more and better governance within a country, and supportive policies are needed to prevent the worst practices and create a level playing field for responsible producers.

Partnerships between governments, the private sector and multi-stakeholder standards are multiplying, in part thanks to the Sustainable Development Goals providing a common language across the private and public sphere. There is increasing evidence that such collaborations between governments and standards systems have brought benefits for producers, consumers and the environment. A recent review for the ISEAL Alliance carried out by Aidenvironment identified 15 cases where the involvement of voluntary standards influenced or resulted in changes to public policy that promoted sustainable production, natural resource management and responsible trade.

In the palm oil sector, for example, the growth of the RSPO has prompted the governments of the two largest producer countries, Indonesia and Malaysia, to develop their own national standards for sustainable palm oil production. While these mandatory standards don't always go as far as they should fight deforestation, they can influence those palm oil producers that are not generally reached by relevant international standards. Engagement with voluntary standards can encourage and guide governments to further strengthen policies. In the Malaysian state of Sabah, the government aims to certify all palm operations against the RSPO Principles and Criteria by 2025. The government of Ecuador has made a similar commitment to meeting the RSPO standard in its rapidly growing palm oil sector.

Examples also exist of mutual recognition between government and voluntary standards and certification schemes. In Minas Gerais, Brazil's chief coffee producing state, the government collaborated with the global sustainability standard UTZ (now merged



A community training session for UTZ standards in Uganda.

Photo: UTZ

with the Rainforest Alliance) to develop its own coffee certification scheme, aimed primarily at smallholders. And, in Mozambique, the Better Cotton Initiative assisted the country's policy-makers in adjusting their rules for cotton concessions to achieve higher yields while improving sustainability aspects.

These examples demonstrate how constructive partnerships between government actors and standard-setting organisations can reduce the hurdles to achieve sustainable practices. Governments in consuming countries also have a big role to play in creating demand for more sustainable products. Public procurement has, in some instances, already been a useful driver of demand, but other types of policies are also possible. The European Union's Renewable Energy Directive, for example, applies private standards to ensure that biofuels used within the EU meet sustainability criteria – although questions remain about the credibility and performance of some of the recognised schemes. Several European countries also use standards systems that offer traceability and credible assurance as a basis for sustainable public procurement policies.

Another recent development that is further changing the relation between public and private supply chain regulation is the adoption of due diligence laws in the EU and elsewhere. Some of these focus on specific human rights issues (such as forced or child labour), while others are broader. Overall, these new laws require importing companies to ensure responsible business practices in their operations and supply chains. Voluntary standards, with robust chain of custody and verification mechanisms, can provide a means for companies to demonstrate com-

Evidensia

In June 2019, ISEAL, the World Wide Fund for Nature (WWF) and the Rainforest Alliance launched Evidensia, a web platform hosting evidence and information on the effectiveness and impacts of sustainability and supply chain tools and approaches. Covering voluntary standards, company sourcing codes and jurisdictional approaches, the site enables business leaders, policy-makers and researchers to understand more about what works where, why and how, as well as to identify where critical knowledge gaps remain.

pliance. While the implications of these new regulations remain to be seen, they could push forward the demand for responsibly produced goods in EU markets.

Overall, what we should expect from committed governments in both producer and consumer countries is that they develop a smart mix of policies: a combination of mandatory and voluntary tools which provide different incentives, but which are streamlined and coherent in their goal of moving towards sustainable food systems and commodity markets.

Opportunities for smallholders

Regardless of the absence or presence of governmental action, credible sustainability standards need to be focused on increasing their accessibility for small farmers. Improving the lives and livelihoods of these farmers is, after all, one of the primary objectives of many standards and certification schemes.

While cost is often cited as a barrier to entry, audit and assurance costs are a relatively small part of this – the real cost is in making the necessary changes to meet the requirements of the standard, from maintaining books of accounts to storage facilities and protective equipment. Over time, evidence suggests that certification helps bring down costs through improved agronomic practices that reduce the use of inputs, and the economies of scale that smallholders can achieve through working together as groups or cooperatives. However, it can take time to realise these savings, and the relationship between certification and production costs can vary greatly in the initial years of certification. Research conducted by Aidenvironment for ISEAL Alliance analysed 40 studies to identify the business benefits of using sustainability standards. The findings

How standards contribute to sustainable rural livelihoods

ISEAL's Demonstrating and Improving Poverty Impacts (DIPI) project aimed to provide a deeper understanding of the ways in which standards contribute to sustainable rural livelihoods and poverty alleviation. As ISEAL members have delved into this topic, it has become clear that monitoring systems need to do a better job of understanding the numbers and characteristics of the smallholders that sustainability standards work with. However, data and insight from empirical studies suggests that, while standards may be reaching poor farmers, they aren't reach-

ing the very poorest in rural economies. This is because the poorest tend to most often be landless wage labourers (see article on page 19) rather than landed smallholder farmers. But what we are learning is that even when they work in poor regions, certified smallholders tend to have slightly larger farms than non-certified smallholders and that the proportion of certified smallholders is higher in middle-income countries than in low-income countries.

showed that sustainability standards improve market access, profitability and production for certified businesses. Almost all sources (98%) referred to sales and marketing related early benefits. On long-term business value, sources referred most frequently to improved reputation (60%), improved profitability (53%), cost reduction (30%) and growth in production, e.g. increased production volumes (30%).

To incentivise improvements and accessibility, many standards organisations have put in place new strategies, such as adapting their models to better fit small-scale operations and developing new partnerships.

Fairtrade has recently released a revised version of its standard for small-scale producers, developed in consultation with the farmers themselves. One change is that a larger majority of members of certified cooperatives must be small family farms than was previously required. As part of its smallholder strategy, the RSPO has just released a new standard for independent smallholders which offers a simpler process for meeting certification requirements while maintaining core sustainability principles.

Other standards are helping to coordinate efforts to support small producers to introduce better practices. Through its improvement partnerships, Bonsucro provides a framework for industry or company schemes that are working with specific groups of farmers and mills to improve sugarcane production and processing. Improvement takes a variety of forms – water stewardship and soil management, better management of inputs and decent working conditions are just some of the areas that can be targeted. For farmers, improvement partnerships can have an impact in terms of better yields and reduced environmental degradation, while processors using mills are able

to improve health and safety and the efficiency of their operations. Similarly, in the seafood sector, the Marine Stewardship Council and Aquaculture Stewardship Council provide a range of tools to guide fisheries and aquaculture improvement projects.

Training measures

The Better Cotton Initiative, meanwhile, incorporates improvement-focused capacity building into its model, which is built around finding the right implementing partner in cotton-producing countries to deliver its standard at field level. This has resulted in hundreds of thousands of farmers across the world receiving training and technical assistance to grow cotton more sustainably. For example, farmers learn how to reduce their inputs – pesticides, chemical fertilisers, water, etc. – and, in many cases, increase their yield. Training is delivered by the implementing partners, which can include civil society, government bodies, national associations and local and multinational businesses. This continuous capacity building is partly funded through 'volume-based fees' paid by retailers and brands that source Better Cotton (see article on page 22).

Ultimately, if the poorest farmers are to benefit from voluntary sustainability standards, they require support from a range of partners, whether governments, supply chain companies, NGOs or other supply chain initiatives. To create a fair and sustainable global food system, it's the responsibility of all actors in every supply chain to work together.



Contract farming is primarily an agreement between farmers and buyers, with pros and cons on both sides.

Photo: Michael Zumstein/VU/laif

Better coordination through contract farming

With globalisation and transformations of our agrifood systems, contract farming (CF) agreements between producers and buyers have gained prominence. But what is CF, and why is there growing interest in it? What is needed for it to be efficient, inclusive and responsible? What are the advantages and disadvantages for both sides? Our authors provide an overview and discuss these issues.

By Carmen Bullon, Lan Li, Costanza Rizzo, Teemu Viinikainen, and Jodean Remengesau

At the heart of contract farming (CF) is an agreement between farmers and buyers in which both parties agree in advance on the terms and conditions for the production and marketing of farm products, usually including the price to be paid, quantity and quality demanded and delivery dates. The contract may also include information on how the production will be carried out or if any inputs such as seeds and fertilisers, financial assistance and technical advice will be provided by the buyer.

CF has been developed and practised for decades. The more recent growth of CF particularly in developing countries is largely linked to transformations of agrifood systems with increasing demands and requirements for agricultural products, growing competition

in agrifood markets and rising dominance of global value chains. CF can allow more efficient and integrated vertical and horizontal coordination of value chains and input and output markets.

Beyond efficiency

It also provides a way for buyers to work more closely with partners in sourcing agricultural products as more consumers demand products that are not only safe to consume but also are of higher quality and greater variety, and are produced in ways that do not damage the environment or harm the workers. The growing interest in CF can hence be attributed not only to efficiency in order to respond to the trans-

formations caused by globalisation processes, but also to an increasing focus on other dimensions of sustainable growth such as economic and social inclusion and environmental responsibility. Smallholder farmers often face various barriers to participating in modern markets, such as lack of access to input and output markets, technologies, and financial and other support services. They are also confronted with challenges of increasing and changing demand, rapid technology advancement and accelerating impact of climate change and natural resource scarcity. CF can help relieve some of these constraints and challenges for smallholders. As poverty is more prevalent in rural areas and at the same time smallholder farming is central to food security, CF schemes have increasingly been seen as a key mechanism to

address these issues as opposed to traditional open-market procurement systems. CF has the potential to promote inclusive and sustainable growth through providing access to resources, technologies and economic opportunities to smallholders as well as through incorporating environmental and social measures in its operations.

Advantages and disadvantages of contract farming

Engaging in CF can have both pros and cons for the actors involved. For farmers, CF can help overcome some constraints and obstacles to market participation, as discussed above. CF connects farmers to buyers and markets. It is possible for farmers to know in advance when, to whom, how many and at what price, and hence this may reduce risks, secure more stable income for farmers and allow them to manage risk and plan better. Many CF schemes introduce new or improved technologies such as new seeds and production methods and provide technical support and training to farmers. CF can also ease farmers' access to inputs and support services such as quality control, transportation and storage that can be part of contractual agreements. For example, fertiliser can be supplied on credit through advance from the company. All these advantages and the development of human capital through experiential learning in producing and marketing one's products can result in more resilient and sustained growth in productivity, competitiveness, income and ability to cope new challenges, which can lead to improved food security and nutrition and better health, education and wellness outcomes.

The major advantages of CF for buyers include more reliable and efficient supply of raw materials and more consistent quality in comparison to the open market. This is in part because CF arrangements allow the companies to introduce production requirements and quality and other standards and to monitor the process as they have closer relations with farmers compared to open-market procurements. The sponsoring companies may have lower risks and manage risks better as they are more informed of the production process. Cooperating with many small farmers can also help overcome land constraints companies might be facing. Integrated provisions of inputs and support services

and a more streamlined supply chain can result in gains in efficiency and competitiveness. Furthermore, CF makes it possible for companies to incorporate standards on social and environmental responsibility and improve due diligence in supply chain management.

Farmers, however, can face serious problems in CF schemes, such as unequal bargaining powers between farmers and companies, inefficiencies in management and delays in the delivery of inputs or payments. They also risk indebtedness because of these difficulties or excessive loans from the buyer. This can result in increased dependency on the buyer which can increase the risk of being exploited. Moreover, farmers under a CF agreement usually are not permitted to sell to other buyers when prices rise, which limits their selling options. Buyers might also be facing certain disadvantages. Likewise, companies may have less flexibility in sourcing supplies as they have committed

Advantages for farmers	Advantages for buyers
Easier access to markets, inputs, technologies, training, credits, services, etc.	More consistent supply and quality
Gains in knowledge, skills, experiences and human capital	Increased efficiency
Increased productivity	Lower risks and better risk management
More secure market	Products conform to standards on quality, safety, social and environmental responsibility
More stable income	
Disadvantages for farmers	Disadvantages for buyers
Loss of flexibility to sell to other buyers for higher prices	Reduced supply options
Lack of bargaining power	High transaction costs of contracting with many small farmers
Possible delays in payments and input delivery	Risks of farmers breaking contracts and side-selling
Possible indebtedness	Potential misuse of inputs, non-compliance of process or standards
Environmental risks of growing only one or certain type of crop	Reputation risks if things go wrong

resources to CF and are bound by the contract. While trust is a central factor in such agreements, farmers may break the contract and side-sell their product to other buyers. It can

also happen that farmers misuse inputs supplied on credit or do not comply with agreed terms on quantity, quality, delivery or production processes. This can negatively impact yields, supply and quality. The increase in CF occurring around the world seems to indicate that the positive aspects tend to outweigh the negative ones. Nonetheless, CF may not be the only or suitable way to organise a commercial relationship, and a good analysis of pros, cons and its alternatives should be considered.

Contract farming and the law

For CF to truly thrive, it requires an enabling legal and regulatory framework at national level. This broad system of laws and regulations governs CF and can help maximise the benefits and minimise the risks of CF. When set up appropriately, this framework can help recognise and protect people's rights and balance the contractual power of involved parties, provide legal security to contractual relations and facilitate enforcement. Overall, it can contribute to enhancing trust between parties in CF, when they know that their rights are both protected and enforceable. The appropriate CF regulatory framework can take many different forms, none of which is necessarily superior to the others. It depends on the country context, its policy needs as well as its legal tradition. Rules related to CF can be placed in specific CF laws, general agriculture legislation, general contract law (including civil codes) or commodity-based legislation among other approaches.

It is useful for legislation to include a reference to the minimum content or provisions that a contract should incorporate to be considered as a complete agricultural production contract. As identified by the Legal Guide on CF and illustrated in the Model Agreement for Responsible CF (see Boxes next page), these provisions include the parties to the contract, technical specifications (e.g. quality and quantity requirements), input supply, price determination and payment, delivery, applicable law and dispute resolution. The parties would always include the producer and the buyer, either as individuals or as legal persons such as producer organisations or corporations, and may include third parties, such as input or finance providers. Technical specifications form the core of the agreement and allow buyers to specify the exact quality and quantity of their

The FAO Contract Farming Resource Centre is established to offer a "one-stop" site where information on CF is made freely available. The Food and Agriculture Organization of the United Nations (FAO) has been responding to the growing demand for information and technical support on capacity building, planning and implementing CF.

UNIDROIT/FAO/IFAD Legal Guide on Contract Farming

The UNIDROIT/FAO/IFAD Legal Guide on Contract Farming (2015) was developed by the International Institute for the Unification of Private Law (UNIDROIT), FAO and the International Fund for Agricultural Development (IFAD) to promote an

equitable, responsible and sustainable environment for CF. It is a useful tool and reference point for a broad range of users involved in CF practice, capacity building, policy design and legal research.



The Model Agreement for Responsible Contract Farming

The Model Agreement for Responsible Contract Farming (2018) was developed by FAO and the International Institute for Sustainable Development (IISD) as a simple and practical legal tool for buyers and producers to improve their business relations and help make responsible ag-

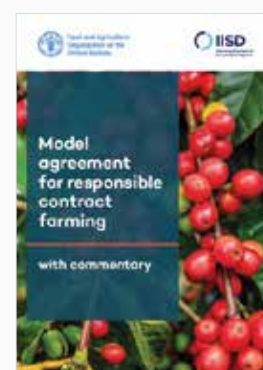
ricultural investment a reality. It draws on the Legal Guide and supports the implementation of global principles and guidelines. It provides simple and customisable templates that can be adapted by the parties to suit the commodity, specific context and needs.



Enabling Regulatory Frameworks for Contract Farming

Enabling Regulatory Frameworks for Contract Farming (2018) was published by FAO, and provides guidance to regulators and other interested readers on how to appraise and potentially reform

domestic regulatory frameworks to achieve responsible CF. This legislative study is supported by case studies and highlights different possible approaches in different contexts.



product and more effectively organise their supply stream. Dispute resolution through alternative dispute resolution (ADR) mechanisms often offers more suitable and effectual solutions than the use of courts as ADR tends to be faster, simpler and less expensive and thus can better support the parties' access to justice. The substantive elements may also include regulatory mechanisms to support, encourage or maintain regulatory control over CF operations. Further, it should always be required that agreements be made in writing. Beyond the legislation that directly affects the parties'

relationships, there is a vast field of other laws and regulations that can influence CF. Competition and labour laws may be applicable to the contract and prevent the use of certain unfair contract terms and abusive practices. Input legislation such as for seeds, fertilisers or pesticides can place limits on input usages. Intellectual property legislation may offer protections and place limitations on farmers' use of some inputs or technologies after the contractual relationship ends. Quality standards can guide the quality requirements as agreed in the contract, and environmental rules must always be fol-

lowed and cannot be contracted away. This brief listing is by no means comprehensive, and any individual country would most probably have many other laws and regulations which would impact CF participation and operation.

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ICT – connecting the food system

ICT in agriculture and food systems is still on the rise, links farmers to the market, to scientists with regard to weather and farm management practices, and provides access to money transfer and information for consumers also reaching remote areas. Our authors present two case studies of existing ICT that connect stakeholders in the food system and describe new ICT-based solutions that are currently being piloted.

By Rabe Yahaya, Mainassara Zaman-Allah, Adefris Teklewold, Julius Adewopo, Martin Gummert, Hung V. Nguyen

In recent years, there has been a tremendous increase in the use of Information and Communication Technologies (ICT) in Africa. In addition, financial services are fast-evolving thanks to ICT innovations, for example mobile money transfer used by smallholder farmers in rural areas in Kenya (M-Pesa) or Uganda (Agrinet) among others (see article on page 42). This has strengthened the dynamics of rural economies, where poor telecommunication and road infrastructure have over decades been predominant. In addition, successful ICT depends on basic infrastructures, a conducive ICT environment, a legal framework and skills for digitising information and digitisation of agriculture.

The recent Malabo Montpellier Panel report (2019) indicates that every ten per cent of Internet penetration might contribute to a 1.35 per cent increase in GDP growth per capita in developing countries. However, the share of the GDP increase can be derived from the agricultural sector itself and will depend on the magnitude of ICT interventions to connect and strengthen the African food systems.

Requirements for digitised services

Digitised services are digital versions of learning, communication, knowledge, skills, data or information. Consequently, the products from digitised services can be training modules, maps, crops production data, environmental data as well as economic data and information. The data have to be collected and then digitised, in order to build upon consistent, traceable and reliable scientific information platforms and tools which are useful for smallholders farming and food systems. Agricultural digitisation refers to the utilisation of digital technologies, innovations and data to transform business models and practices across the agricultural value chain.

There is an important amount of produced digital data. However, their conversion or transformation from this level to agricultural digitisation might require specific knowledge and skills of computer sciences and program-



Receiving governmental e-vouchers on mobile to buy farm inputs in remote areas.

Photo: Jörg Böhling

ming coupled with telecommunication skills, multi-stakeholder sectorial approaches in food systems, with special attention being given to a socio-economic view of coordination and connection through ICT. This data operationalisation has the power to transform rural economies that are mostly agricultural-driven. The use of ICT links the farmer to the outside of his or her community and generates access to farm inputs and knowledge and markets, improves agricultural productivity and enhances overall agricultural sector performance through timely and actual up-to-date information (e.g. weather forecasts and early warning systems, commodities and inputs prices, release of new varieties of seeds, fertilisers, pesticides,

machines and technologies, or the outbreak of new diseases). Nevertheless, a lack of knowledge to operate and use ICT properly, combined with associated high maintenance costs, might be limiting factors for smallholder farmers to use ICT solutions. In this contribution, we are presenting some key ICT tools that have improved smallholder's livelihood, food security and income and some with potential future impact in the African food systems through potential multi-stakeholder coordination between the International Maize and Wheat Improvement Center (CIMMYT), the International Institute of Tropical Agriculture (IITA), the International Rice Research Institute (IRRI) and other CGIAR centres.

Coming soon...

Pilots of ICT solutions, currently tested by CIMMYT, IITA and IRRI

Disease Surveillance App (IITA) – the ICT-based surveillance tool is based on a citizen-science approach and helps banana farmers in East Africa to combat the spread of Banana Xanthomonas Wilt (BXW), a bacterial disease that affects banana plants and leads to a total loss of infected banana stands. Structurally, the tool has four modules, namely threat/impact of BXW, stepwise diagnosis, management/control of BXW, and proven agronomic practices for banana production. This digital innovation is envisioned to serve the dual purpose of empowering farmers while strengthening the capacity of local institutions (e.g. the Rwanda Agricultural and Animal Resources Board).

Mobile-based [near-] real-time food price crowd-sourcing (IITA) – the commodity food price is considered as one of the critical indicators of food security because it impacts affordability and nutritional choices of consumers, especially those in the low-income countries. By using open data kit-based survey tools through smartphones, prospective volunteers were enlisted to submit geo-referenced prices of four commodities (rice, beans, maize, and soybeans) from the farm-gate to the consumer gate in Nigeria. This citizen-science approach leverages on eclectic digital tools and platforms to crowdsource food price data. Also, the price data covers markets within both rural and urban areas, which can be very useful for the assessment of price transfer along the rural-urban spatial continuum.

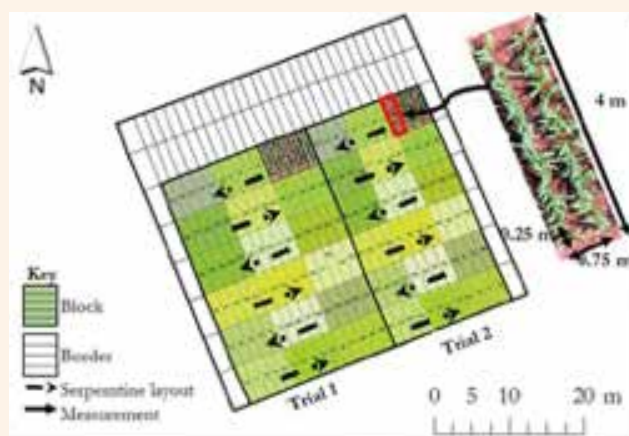
Use of drones in agriculture (CIMMYT) – equipped with sensors, multispectral cameras and GPS receivers, drones can support farming systems efficiently. CIMMYT is using drones in Africa aiming to provide decision support to farmers through consistent data collection, reduction of the time and financial effort required to collect and analyse data and thus predicting variables for yield, biomass and other traits. Indicators such as the Normalised Difference Vegetation Index (NDVI), chlorophyll rate, leaf area index, water/nitrogen stress, flowering, etc. are crucial for CIMMYT scientists to provide decision support to farmers and seed companies on crop senescence, vigour, plant counting, pesticides/ fertiliser sensitivity and yield prediction.

a) Farm crop senescence – through drone imagery, crop aging can be determined. This categorisation, especially with time series data, enables the evaluation of crop stress severity and might support farmers either to start a farm harvest or schedule the appropriate timing for crop harvesting. The key advantage of the drone approach is that it is faster and cheaper compared to the methods commonly used which are essentially manual and/or by require scoring, and are therefore often subjective, time-consuming and expensive.

b) Plant counting – plant count evaluates the yield component attribute and germination rate, which is difficult to assess. This is labour-intensive work that can be facilitated by drones. The Figure on the left shows how plant counts are performed using drone imagery. The process can be automated and used routinely to conduct plant population assessments. The results can help to reduce seed production and yield estimation costs, which can incentivise farmers to adopt more improved seed.

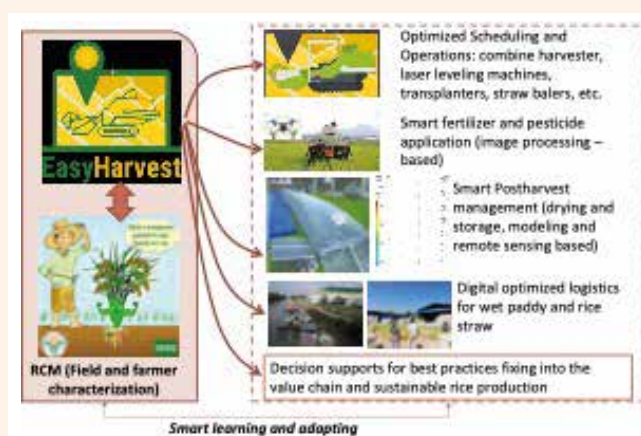
3D printer (IRRI) – 3D printing has a huge potential to address the problems in existing spare part supply chains of agricultural machineries in developing countries such as long delivery times, availability, low quality and high cost of parts, or even parts that don't fit. Farmers will benefit from timelier and better quality in machinery contract service provision and machinery owners from reduced downtime and cost. Even the original equipment manufacturers can benefit from savings by not stocking parts that are rarely needed. A locally developed 3D printing service network should be in place to take advantage of the technology. Intellectual property and rights management will have to be a key component of any business model since copying other companies' parts would in most cases violate the latter.

App for optimised scheduling of combine harvesters (IRRI) – EasyHarvest provides a platform for farmers in selecting best options to book services such as combine harvesters at their own convenience, using their smartphone or the computer. Service providers and farm managers would be able to anticipate and optimise scheduling for more effective and efficient use of machines, higher net profits and sustained business operations. This App Platform is further being developed to connect and benefit farmers, service providers, consumers and the environment by potentially reducing rice harvesting costs by at least 10 per cent, post-harvest losses by 2-5 per cent and greenhouse gas emissions by 5-10 per cent thanks to less loss and waste.



Crop senescence using drone imagery (left).
Figure: CIMMYT

Screenshot of EasyHarvest application (right).
Figure: IRRI



DIGITISED SERVICES IN AFRICAN FOOD SYSTEMS

Two case studies are described in the following – an e-voucher system in Nigeria to reach out to remote small-scale farmers providing government subsidies for fertiliser and seeds as well as a radio-based awareness campaign for a better nutrition with high protein maize in Ethiopia.

E-vouchers for fertiliser and seeds in Nigeria

In 2012, the Nigerian government initiated and started implementing the Growth Enhancement Support Scheme for a duration of five years. The scheme aimed to provide efficient large-scale input subsidies to poor smallholder farmers through input-smart subsidy schemes. The past initiatives had failed because of huge corruption, with seeds and fertilisers never reaching the farmers in need. By systematically registering every single farmer in the targeted area, the programme reaches more farmers than before. The new programme mostly subsidised fertiliser and seeds to improve smallholder farmers' agricultural productivity and food security, and to enhance income generation. Registered and entitled farmers in the e-wallet (e-voucher) system received notification and information on their mobile phones allowing them to buy specified quantities of fertiliser and seeds at their nearest agro-dealer for subsidised prices. Through the e-voucher, subsidies of 50 per cent for two 50 kg bags of NPK and urea fertiliser and 90 per cent on a 50 kg bag of improved seeds were allocated. Within five years, 20 million smallholder farmers were targeted nation-wide by the programme. According to the government, 90 per cent of targeted farmers were reached through the fertiliser e-voucher programme, while the cost of distributing the subsidised fertiliser was cut by 60 per cent. Empirical evidence shows that e-voucher farmers increased maize yield by 26.3 per cent, with a similar increase in income generation compared to the farmers who didn't participate. Significant welfare increase was reported on food and non-food consumption expenditures per capita of 30.7 per cent. In turn, this reduced the poverty headcount ratio among e-voucher participants of the programme to 17.7 per cent.

Improving nutrition through the radio

Implemented from 2012 to 2019, CIMMYT's Nutritious Maize for Ethiopia project aimed

at addressing the high risk of lysine deficiency in young children and women in maize-dominated agricultural production systems. Thus, quality protein maize (QPM), a type of maize having increased levels of lysine and tryptophan, has been related to better nutritional outcomes in children's growth on a maize-based diet. The project was implemented in 36 major maize growing districts (woredas) in four regions of Ethiopia (Oromia, Amhara, South and Dimtse Woyane Tigray). Within the woredas, a target of 50 per cent of the population were to be reached through radio podcasts on QPM and its nutritional benefits for them to be aware of and adopt QPM in their daily life.

To achieve this, the project partnered with Farm Radio International (FRI) in collaboration with four local radio stations and implemented the radio-based awareness creation. The radio stations have the potential to reach out to a large audience that are growing about 90 per cent of the total maize in Ethiopia. Around 66 per cent of the farm households and 61 per cent of spouses headed households had access to radio-based awareness creation, while taking gender-balanced access into account.

Per radio, the programme reached a broader audience than other conventional extension approaches. The strategy of the participatory radio programming (PRP) approach made use of farmers' voices and feedback mechanisms on the 30-minute programmes that were broadcasted twice weekly over twelve to 16 weeks in each season. In total, 320 individual episodes were created and broadcasted during the project years. Also separate male and female community listener groups (CLGs) were established in the target districts as a way of connecting and interacting with audiences. Radios were handed over to the CLGs. The members met weekly to discuss PRP topics and gave feedback to the group representative on broadcasts aired recently.

For women with limited to no access to radios and/or no individual choice whether to participate in programme, CLGs were particularly useful in creating opportunities. Using a 'beep-2-vote' polling technique whereby farmers responded to simple 'yes' or 'no' questions on the radio by calling a different mobile phone number then hanging up (vote registered as an unanswered call), the number of farmers planning to plant QPM or looking for seed could be determined and conferred to the relevant services. The results show that awareness of QPM increased substantially in

male household heads (79%), followed by female household heads (64%) and spouses (58%). The common male knowledge on nutrition and protein also increased, albeit from a higher baseline than the women's usually lower baseline. The women's knowledge was similarly improved. Several survey respondents indicated a high level of participation in QPM events; an increased awareness was associated with direct participation in field demonstration visits (45–75% of respondents) and field days including food preparation demos (10–30%). The radio broadcasts were ranked as the most important indirect source of QPM information, whereas low listenership was associated with low levels of radio ownership.

What next?

From the highlighted applications of ICT-based tools and techniques within the CGIAR system and across countries, it is evident that collaborative efforts to tackle the environment and socio-economic challenges can be improved through digitised data, information and knowledge from all stakeholders across countries and organisations. This appeals to more coordination among the CGIAR institutes to seize and capitalise the potential of functional and available ICT tools for a holistic farming system approach, that consolidates, integrates and packages solutions in the benefit of smallholder farmers across crops diversification, value chains, interdisciplinarity, CGIAR mandates and trans-continental for a better world through science and technology of ICT for research and development.

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Rural labourers loading certified cocoa onto a lorry in Côte d'Ivoire.

Photos: Jorge Sellare

Does Fairtrade benefit farmers and rural labourers in Africa?

A research study in the cocoa sector of Côte d'Ivoire shows that Fairtrade certification benefits farmers and employees of agricultural cooperatives. But what about hired labourers working on smallholder farms? Our authors argue that clearer Fairtrade labour standards for farm workers and better monitoring are required to implement the fairness model more comprehensively.

By Eva-Marie Meemken, Jorge Sellare, Christophe Kouame, Matin Qaim

When consumers of cocoa, coffee or bananas decide to purchase products with the Fairtrade label (see article on page 10), they pay a certain premium, expecting to help improve the socio-economic conditions of farmers and agricultural labourers in developing countries. Many studies looked at the effects of Fairtrade certification on smallholder farmers or on labourers in the plantations and factories of large agribusiness companies. Although hired labourers working in the small farm sector form a large group, the effects that Fairtrade has on them have rarely been analysed. Typically, these small farm labourers belong to the poorest of the poor in rural areas. Nevertheless, they are often neglected by development initiatives, which may partly be due to the false assumption that smallholder farms only operate with family labour. In reality, most of these farms also hire outside labourers for cultivation and harvesting, especially for labour-intensive cash crops. We carried out a recent study in the cocoa sector of Côte d'Ivoire in order to better

understand the effects of Fairtrade on smallholder farmers and different types of rural labourers. Côte d'Ivoire is the largest cocoa producer and exporter worldwide. For the study, we randomly sampled 50 cocoa cooperatives, 500 farmers that are members of these cooperatives, and 500 labourers at cooperative and individual farm level. Quantitative data were collected through face-to-face interviews using tablet computers and structured questionnaires.

The cocoa sector in Côte d'Ivoire

Much of the cocoa in West Africa, including Côte d'Ivoire, is produced by smallholder farmers who are often organised in cooperatives. A typical cocoa cooperative comprises several hundred farmers, who manage their farms independently but market their cocoa through the cooperative. The cooperatives also offer services to their member farmers

such as input provision and training related to cocoa production and crop management. To run these services, each cooperative has several employees. In our sample from Côte d'Ivoire, cooperatives have 15 employees on average.

Typical farm sizes in our sample vary between five and 15 hectares. For these farms, cocoa is the main cash crop, even though several other crops are also grown for home consumption and market sales. Most farmers have at least one hired worker on a longer-term basis to manage and harvest the cocoa trees. In addition, casual labourers are hired seasonally. In total, there are at least 20 times more farm workers than cooperative employees.

Fairtrade certification is organised at cooperative level. Of the 50 cooperatives in our sample, 25 are Fairtrade certified, while the other 25 are not certified. Farmers in Fairtrade-certified cooperatives receive a guaranteed minimum price for their cocoa, the so-called Fairtrade

floor price. In addition, certified cooperatives receive a Fairtrade premium, which they can use to improve the services to their member farmers or for other activities to promote community development. Fairtrade certification also comes with a few requirements. In particular, certified cooperatives have to follow democratic principles and meet certain labour standards, including fair labour conditions and the payment of official minimum wages (see Box next page).

Fairtrade effects on farmers

Our data show that Fairtrade benefits farmers in terms of higher cocoa prices. Because of more intensive training and input supply, farmers in Fairtrade-certified cooperatives also have significantly higher cocoa yields than farmers in non-certified cooperatives. Higher prices and higher yields contribute to higher incomes and improved household living standards. Regression models that we estimated

show that Fairtrade increases living standards of smallholder farm households by ten to 15 per cent, also after controlling for possible confounding factors at the farm and cooperative level.

Fairtrade effects on rural labourers

To analyse effects of Fairtrade on labourers, we distinguish two types of labourers, namely cooperative employees and farm workers. Both types of labourers are relatively poor, but on average, cooperative employees are better off than farm workers in terms of education and asset ownership. Farm workers in the cocoa sector of Côte d'Ivoire are often migrants from neighbouring countries, including Togo, Mali and Burkina Faso. As mentioned above, in to-



Cooperative employees drying and sorting cocoa beans.

tal, there are many more farm workers than cooperative employees.

Cooperative employees in non-certified cooperatives receive an average monthly wage of around 42,000 West African Francs (CFA), roughly the equivalent of 80 US dollars. Less than half of them are paid at least the official minimum wage of 36,000 CFA (about 65 US dollars). For comparison, cooperative employees in Fairtrade-certified cooperatives earn significantly more, and almost all of them receive at least the minimum wage. This suggests that most Fairtrade-certified cooperatives meet the Fairtrade wage standards. Higher monthly wages and a larger number of working months also lead to higher annual wages, higher total incomes and lower poverty rates among employees in certified cooperatives.

No significant monthly or annual wage differentials are observed among farm workers regarding farms with and without certification. In spite of significant Fairtrade benefits for farmers, many of the hired farm workers do not even receive the official minimum wage. Similarly, we have noted no significant differences in terms of total incomes and poverty rates among farm workers on farms with and without Fairtrade certification.

These simple comparisons do not allow causal conclusions because of possible confounding factors. We used regression models with instrumental variables to check for confounding factors and estimate the net effects of Fairtrade certification on wages, working conditions, and incomes of cooperative employees and farm workers. The regression results confirm that cooperative employees benefit from Fairtrade certification, whereas farm workers do not.

Specifically, Fairtrade increases the annual wages of cooperative employees by 160 per cent, raises the

likelihood of receiving at least the official minimum wage by 59 per cent, and reduces the likelihood of living below the poverty line by 35 per cent. Furthermore, for cooperative employees, Fairtrade increases the likelihood of having a written employment contract by 62 percentage points. For farm workers, no significant Fairtrade effects are found for any of these variables.

Sharing benefits – who are the winners and losers?

Our main finding is that the effects of Fairtrade are heterogeneous. For smallholder farmers and cooperative employees, Fairtrade standards seem to be an effective tool to increase incomes and reduce poverty (at least for those with ac-

cess to Fairtrade certification). However, positive effects have not been observed for hired labourers working on smallholder farms. Hence, our findings challenge the notion that Fairtrade benefits everyone participating in certified value chains, including the poorest of the poor.

Our results of positive Fairtrade effects for farmers are consistent with earlier research in different countries of Africa. And our results for cooperative employees are similar to those of other studies that have analysed effects of Fairtrade on labourers in large agribusiness companies. Large companies and cooperatives are able and willing to implement the Fairtrade labour standards that contribute to higher wages and improved welfare among employees. Compliance with labour standards at cooperative level is typically closely monitored during Fairtrade inspections (see Box), leaving little room for cooperatives to disregard such standards. Our data also suggest that Fairtrade certification helps cooperatives to attract more members, sell larger quantities of cocoa, and provide a wide range of services, resulting in better prices and higher yields for farmers. Certified cooperatives offer better paid employment, as well.

Looking at hired labourers

In contrast, wages and working conditions of hired labourers working on smallholder farms are not affected by Fairtrade certification. This is likely due to several reasons. First, labour standards at farm level are rarely monitored during routine inspections. Hence, farmers have little incentive to enhance farm workers' wages and working conditions. Clearly formulated rules for non-permanent farm workers are currently lacking. Fairtrade has recently undertaken efforts to better understand and address labour issues in the small farm sector, which seems to be an important step. Second, even when labour standards are clearly defined, implementing and monitoring them on a large number of spatially dispersed smallholder farms is associated with high costs and considerable practical challenges.

In principle, it is also possible that hired labourers on smallholder farms do not benefit because farmers themselves only gain little from Fairtrade certification. But this is not the case in Côte d'Ivoire, where we have been able to show that farmers themselves benefit significantly. Traditional payment modalities make it easy for farmers to keep wages low instead of also sharing the Fairtrade benefits with their hired workers.



A worker's family on a smallholder cocoa farm. Farm workers belong to the poorest of the poor in rural areas.

Studies on the effects of Fairtrade with an explicit focus on workers in the small farm sector do not exist for other African countries. While our results from Côte d'Ivoire cannot simply be generalised, it is likely that small farm workers in other settings will not benefit much from Fairtrade certification either, because labour conditions on small farms are not regularly monitored. Fairtrade, as the standard-setting body, as well as certified cooperatives have a role to play in ensuring that the benefits are shared more equally among those who participate in Fairtrade value chains. Failing to do so could possibly contribute to rising local inequality.

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Fairtrade certification and inspections

Fairtrade was launched in 1988 by the Fairtrade Labelling Organization (FLO) with the aim of improving the livelihoods of smallholder producers. Fairtrade certification can only be attained by cooperatives (or other types of producer organisations) that are farmer managed, transparent, and founded on democratic principles. In order to be certified, a cooperative has to submit an application and is physically inspected against Fairtrade standards. Inspections are carried out about once a year by FLOCERT, an independent auditing body. Fairtrade-certified cooperatives have to ensure good labour conditions for their employees, including payment of minimum wages and implementation of measures to reduce occupational health hazards. The use of child labour and forced labour is not allowed. Fairtrade also has certain rules for environmental protection, including safe use of pesticides and fertilisers. In principle, the standards and rules apply to the cooperative as well as to all member farms. However, the inspections are mostly carried out at the cooperative level. Auditors also visit a small sample of individual member farms, but they do not inspect all the hundreds of farms that typically belong to each cooperative.

Enhancing water productivity by using a “push-pull-policy” approach

Unsustainable use of water is becoming a huge problem. The innovative *push-pull-policy* approach addresses this issue by involving all stakeholders in promoting better agricultural practices, creating financial incentives to use them and improving governance to sustain them.

By Jens Soth and Christina Blank

Water productivity – or the ratio of agricultural output per unit of water input – is important for increasing food security. More than two-thirds of human water consumption is used for agriculture. As climate change advances, water is becoming a scarce resource, further threatening the already fragile state of agriculture in many countries and creating a growing risk of conflict over rights to water resources. Addressing water issues is thus a key component for achieving sustainable development, reducing hunger while promoting peace and economic well-being.

Helvetas Swiss Intercooperation is the consortium leader of a multi-sectoral group of actors who are rolling out an innovative approach through the Water and Productivity Project (WAPRO, see Box next page). The goal is to address inefficient irrigation practices in smallholder farming. To tackle this problem, the Swiss Agency for Development and Cooperation (SDC) and Helvetas jointly developed the *push-pull-policy* approach. Actors from the private sector, civil society and standard bodies joined forces to address challenges of water scarcity and sustainable irrigation management. New production and irrigation practices shall allow farmers to maintain or grow their incomes without putting additional strain on local water supplies. The project focuses on rice and cotton, two highly water-intensive crops that play important roles in local food security and economic growth.

While the Sustainable Rice Platform (SRP), the Alliance for Water Stewardship (AWS) and the Better Cotton Initiative (BCI) are project steering partners, providing guidance to farmers on sustainable production and water stewardship, WAPRO’s experience and evidence help the standard revision processes. For example, the project plays an important role in rolling out the new Water Stewardship Principle of the BCI standards globally, and its experience in implementing water stewardship at farmer level is fed into the technical committee of AWS.



Training on exact water quantity measuring in Tajikistan.

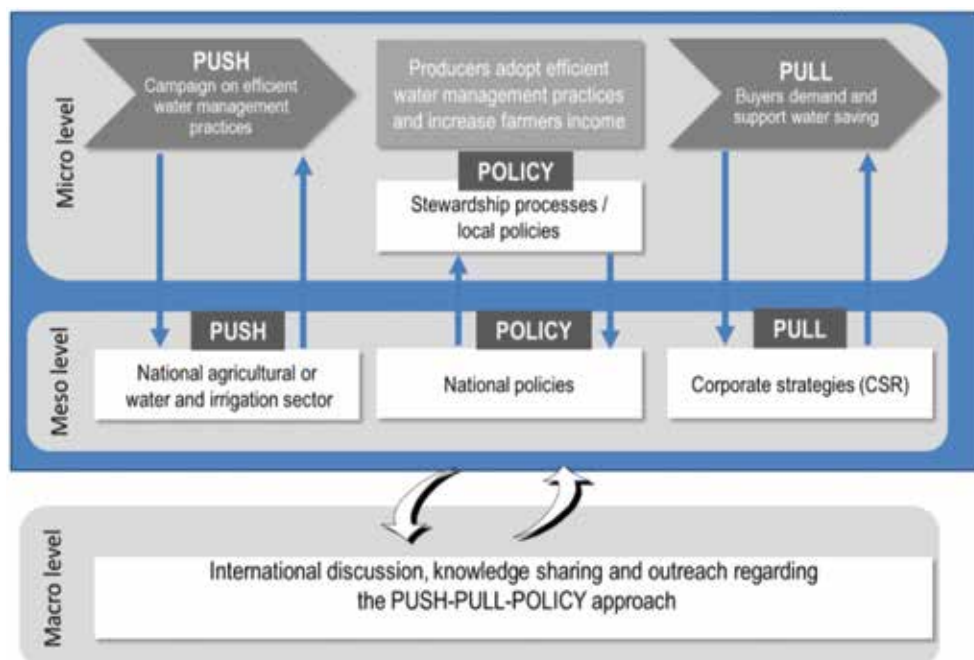
Photo: Muzaffar Ahkmedov

The *push* component – learning

Farmers are the main consumers of global water reserves, but are also among the poorest citizens of the world. Poverty prevents them from accessing water-saving knowledge. Within the *push* component, they are trained

on new sustainable production technologies and water saving methods such as modern irrigation practices, intercropping, soil cover or mulching, laser levelling, water measuring, and others (see Table on page 24). Farmers in Kyrgyzstan and Tajikistan save 30–40 per cent of water by switching to shorter furrows, which

Intervention levels of project



Source: Helvetas

allow for a better balanced water distribution. In addition, diversified crops using water and other resources more efficiently than monoculture crops are promoted. Lentils planted into a rice field are first irrigated by the same water which is used as the last irrigation flow for rice. Results are shared with the national agriculture and water sector actors to encourage the replication of the technology, which has proved successful.

Local circumstances can only lead to different implementing actors in the *push* component of the *push-pull-policy* approach. Here, public extension services often have insufficient capacities to implement projects on their own. In this case, the implementing party is either a civil society organisation, a service provider or the private sector itself. Nevertheless, collaboration with public extension services is planned for many sub-projects of the WAPRO project, thereby allowing for a broader outreach of the new technologies introduced. In all sub-projects, the agricultural production of either rice or cotton was linked not only to water saving technologies, but to broader sustainability standards (BCI, SRP, AWS, etc.) as well.

The more traditional *push* component is important, although more is needed to increase an uptake of improved practices. So how to create incentives and policies to support these practices? This is where the *pull* and *policy* components come in.

The *pull* component – financial benefits

Even among farmers who are aware of water saving methods, only a few end up adopting them. Without financial incentives, they are reluctant to make significant investments of time and money for an environmental benefit only. By promoting methods that not only save water but also increase production, farmers have a financial incentive to save water. In India, for example, the system of rice intensification allowed an increase in crop productivity of 70 per cent compared to traditional methods. Turning *pull* activities into practice is realised by local value chain actors, who are the responsible purchasing and processing agents within the value chain. These private-sector actors create additional incentive mechanisms for farmers either by offering premium prices for crops produced under sustainability standards, pre-payment of the crop, access to microcredits, and secure access to enhanced markets or integration into agricultural extension programmes (e.g. saving money by using less pesticide). Activities within the *pull* component consist of the “off-take” of the products produced by the farmers taking part in the training and extension of the *push* component.

The *policy* component – governance

A lack of governance in water distribution, maintenance of channel systems and irrigation

The WAPRO project

The WAPRO project was first implemented between 2015 and 2018 in four countries in Asia (India, Pakistan, Kyrgyzstan, and Tajikistan) by a consortium of nine partners involving 23,600 farmers. The milestones achieved so far are a reduced consumption of irrigation water of 15 to 33 per cent and an increase in farmer’s income of between 6 and 32 per cent.

The second phase of the project is being implemented from 2018 to 2021 in ten sub-projects operating in six countries (India, Pakistan, Kyrgyzstan, Tajikistan, Myanmar and Madagascar).

In collaboration with the Islamic Development Bank, key elements are being replicated in ten sub-Saharan countries (The Gambia, Senegal, Guinea, Sierra Leone, Niger, Mali, Burkina Faso, Benin, Côte d’Ivoire and Cameroon). The number of countries covered by the project in Asia and Africa has now grown to 16, with 22 partners aspiring to improve the lives of 60,000 farmers. Diverse stakeholders – from farmers and local NGOs to corporations and governments – take joint responsibility for the precious resource water.

infrastructure, and timing of irrigation goes beyond the reach of an individual farmer or company. Consequently, farmers often do not apply water-productive technologies and irrigate as much as possible when water is available. The solution is a policy dialogue based on evidence. The local *policy* component is realised by civil society organisations strengthening the capacities of water user associations in implementing agreed-upon action plans. The activities of the *policy* component consist of workshops with the farmers, other water users and water management/irrigation authorities by following the guidance outlined in the standard of the AWS. Rather than waiting for top-down policy changes, farmers and other villagers jointly agree on a reasonable way to share water resources and create plans to improve the local water situation. Farmers work with the local authorities to adapt the regulatory frameworks, for example regarding water distribution rights or water payment schemes. For the implementation of the *policy* component, it is important that the private sector does not try to act either as a convening nor facilitating actor. Such attempts could easily be perceived as influencing local water

distribution, and thus would probably attract a lot of criticism and objections. The external impulse given by the *pull* of the private sector catalyses local awareness, aiming to achieve behavioural change with regard to a more sustainable water management through the farmers and a better governance through the decision-makers. The governance changes at local level help advance national agriculture, commodity and irrigation reforms and pave the way to scaling up the approaches to other regions.

Advantages for smallholder farmers

The key advantage for smallholders is leveraged by the support of the value chain actors and implementation of a commodity standard that ensures productivity gains, market access and premium prices when producing under sustainability standards. Farmers not only counteract challenges of water scarcity and climate change, but also realise collective action for water governance improvements. Since they are contributing to improvements by changing their production technologies, they justify postulating improvements realised by local irrigation authorities either with regard to the water distribution cycles or via renovation of canal irrigation infrastructures.

Being able to produce under international standards improves market proposition of the agricultural produce next to the direct sustainability improvements that the implementation of standards is related to. The *push-pull-policy* approach supports farmers' groups in expanding their sphere of influence by implementing the *push* themselves, and then becoming a relevant and reliable partner for the local water governance discussions.

Advantages for the private sector

Many private companies and brands interact with farmers in a value chain activity. Ensuring the future raw material supply with high quality standards, the improvement of the sustainability performance and preventing potential image risks as well as the opportunity to communicate such activities in tangible and comprehensible ways to consumers are key drivers for such types of engagement. Nevertheless the impact is very much restricted to activities that can be rolled out with farmers directly or with farmers' cooperatives. Addressing the more complex challenge of water governance or even higher levels of water regulations and policies is neither the role nor

The Table shows a selection of new technologies and involved actors (2018-2021).

Country	Value chain	Push actor	Pull partner	Policy partner	New technologies
India	Organic cotton	bioRe Foundation	bioRe and Coop Switzerland	bioRe Foundation	Organic farming, diversification of crop rotations, cultivation of water saving and robust cotton varieties
India	Organic rice	Partners in Prosperity, Helvetas India	Reismühle Brunnen, Coop Switzerland	Partners in Prosperity	Organic farming, diversification of crop rotation, systems of rice intensification
India	BCI	Coastal Salinity Prevention Cell, Tata Trusts	BCI	Coastal Salinity Prevention Cell	Alternate furrow irrigation, drip irrigation, reduction of agro-chemicals
India	SRP	LT Foods Jain Irrigation	Mars Foods ("Uncle Ben's rice")	Partners in Prosperity	Drip irrigation, alternate wetting and drying, laser levelling, reduction of agro-chemicals
Pakistan	SRP	Rice Partners Limited, Galaxy Rice Mills	Mars Foods, Westmill	Helvetas Pakistan	Alternate wetting and drying, laser levelling, reduction of agro-chemicals
Tajikistan	BCI	Sarob Farmer Cooperative	BCI	Helvetas Tajikistan	Short furrow irrigation, fertigation, plastic mulching, reduction of agro-chemicals

Better Cotton Initiative (BCI) Standard
Sustainable Rice Platform (SRP) Standard

the qualification of private sector actors. This sphere of action can be added with the *policy* component of this project approach allowing the private sector to engage in complex fields such as the water sector and its overall management.

Advantages for international donors and the national public sector

International donors – in the case of WAPRO this is SDC – can help to steer the process with a particular focus on a systemic change in the *policy* component. Furthermore, the supporting funds are relevant to “de-risk” the engagement of all parties, since it is unlikely that an individual actor would risk engagement in all components alone. The advantage for the international donor communities is the integration of the private sector into long-term sustainability and development engagements. Thereby the impacts can be leveraged, and the collective understanding of a development agenda increases.

The national public sector, i.e. the government, benefits from the engagement of the international actors and the momentum that is created by combining improved technologies at field level with local policy discussions. In many cases gridlocked discussions can be opened up. Moreover, debating modern technologies and sustainable production methods is encouraged.

Outlook

The *push-pull-policy* approach is a set-up for future public-private partnerships where public goods (water, forest or communal land are in focus for a more sustainable use, often referred to as a landscape approach) or complex sustainability challenges (land degradation, biodiversity loss and climate change) require concerted efforts of different stakeholders. The clear roles assigned to involved entities and the synergistic effects unlocked by the project components leverage development progress that could not be achieved, if either the *push* or *policy* activities were carried out as “stand-alone projects”. Only the close intertwining with the *pull* of the private sector ensures that the long-term benefits can be perpetuated even after the supporting funds of the public sector have run out. The allocation of responsibilities of the components also allows for an efficient replication of similar projects. Given the time pressure for action in the sustainability challenges, this may be a welcome basis for quantum leaps in the sustainability impact of such projects.

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The new potato planter is suitable for small fields – an important innovation for the farmers.

Photo: Jonathan Ziebula/GIZ

Many players, one goal – the Green Innovation Centre in India

By their very nature, value chains are multi-stakeholder systems. The Green Innovation Centre in India demonstrates how the multi-stakeholder approach can be used in potato and tomato production as a systematic tool to disseminate innovations in the Indian agriculture and food sector.

By Lukas Hanke, Julia Jung and Jonathan Ziebula

The sun is beating down on a tomato field in India. Small shrubs and palms grow along the approach street, and motorcycles are passing by. Farmers and workers, dressed in colourful dresses or in light, short-sleeved shirts and white hats, are stretching their necks to get a look at their yield. Eighty days have passed since they sowed these tomatoes. Now, they are standing in a circle to inspect their work. They are not alone – representatives from the research institute World Vegetable Centre, the local seed company Orbi Seeds and the local tomato processor SunSip have also come to see the progress of the field trials. Brought together by the Green Innovation Centre, these scientists, businessmen and farmers forming the stakeholder group have a common goal – to test and introduce

tomato varieties suitable for processing in India – a formidable task (see Box next page).

Challenges such as the introduction of new crop varieties can only be tackled successfully if many different stakeholders are involved. One single player – be it research, a development agency, a private company or a farmer – might not achieve the same outcome. Moreover, inclusion of relevant stakeholders from the beginning increases the ownership of the actual solution.

Just like for processing tomatoes, the Green Innovation Centre India uses the involvement of multiple stakeholders as an effective tool to disseminate new technologies and to develop busi-

ness models along horticultural value chains. Working with diverse partners can of course be both a challenge in terms of coordination and an opportunity for sustainable progress.

How is the multi-stakeholder approach being implemented in the project?

In a structured value chain analysis, the major gaps and relevant actors are identified. Based on this, value chain platforms are organised in which different actors are brought together and can come to a joint agreement on technology transfer or other forms of cooperation. Now the willingness between different actors is on paper. However, this needs to be

transferred to the field. Again, the Green Innovation Centre comes into play. It facilitates the implementation, organises exposure visits, monitors activities and collects data. At the end of the process, all stakeholders are invited to come together again and evaluate their joint effort and future steps.

Who is involved?

- **Farmers and farmer groups** – they mainly identify needs on the ground, and test and verify innovations (e.g. through participatory development trials to compare conventional farming techniques with new practices)
- **Private enterprises and “eco-pre-neurs”** – both are drivers of innovation and providers of technology development, and they push the commercialisation of innovations (e.g. demonstration of modern ploughs and power harrows by the German manufacturer Lemken)
- **Research institutions** – scientific backstopping and identifying innovations (e.g. provision of package of practices and seed varieties by World Vegetable Centre, International Potato Centre [CIP] or the Indian Institute of Horticulture Research)
- **Government institutions** – to up-scale innovations (e.g. empanelment of innovative machinery in subsidy programmes of the Indian Ministry of Agriculture and Farmers' Welfare)
- **Training and skill building facilities** – farmers are trained to understand and use the innovations (e.g. Green Colleges, accredited schools on green trades in rural areas)

The following two cases are examples of how the Green Innovation Centre India finds solutions with various stakeholders.

Mechanising potato cultivation in Southern India

Good news – potato demand and productivity in India are both continuously increasing! Traditional potato growing areas in the states of Karnataka and Maharashtra play a crucial role for the south Indian potato market. However, the potato's path from seed to the consumer's plate is long and offers great potential for optimisation and cooperation between various stakeholders. In this example, we are looking at the mechanisation of potato cultivation.

The Green Innovation Centre India

The German Federal Ministry for Economic Cooperation and Development (BMZ) has established 15 “Green Innovation Centres for the Agriculture and Food Sector” – in 14 African countries and one in India. These centres are at the heart of the special initiative “One World – No Hunger” and are implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The Green Innovation Centres are networks of various stakeholders which are united by their common goal of realising the initiative's vision.

Smallholder farmers are in focus of the Green Innovation Centre India, which supports them in sustainably increasing their agricultural productivity and income. A second objective is to create new jobs in the agriculture and food sector. To achieve both, the project disseminates innovations along value chains based on the three crops tomato, potato and apple, working in line with priorities of the Government of India, such as ‘Doubling Farmers’ Income by 2022’. The Green Innovation Centre promotes the expansion of innovations through advisory services, the organisation of training, further education and facilitating access to loans. These innovations can be of a technical nature, such as agricultural mechanisation or improved seeds, fertilisers and food cooling chains, and in many cases, they focus on new cooperation channels, such as setting up producer associations, specialised enterprises or interest groups.

1. The Green Innovation Centre brings actors together who otherwise might not necessarily cooperate.
2. The Green Innovation Centre is by default connected with actors along the whole value chains. The same applies to the government, which is seeking successful models for upscaling.
3. One of the major challenges when working in multi-stakeholder systems is building trust. Bringing everyone together is the easy part – but getting a machine manufacturer to understand a farmer's perspective on potato cultivation or making a farmer understand the economic constraints of private companies is the real challenge.
4. The Green Innovation Centre is an innovative project with no commercial interest. This enables us to support promising endeavours which would probably not be supported by regular businesses.

To ensure that the potato plant thrives well, the seed potatoes must be planted about eight centimetres deep with a spacing of 35 centimetres in loose soil. Cultivating a whole field in this way in the midday heat is exhausting and expensive due to high labour costs. But with the right machine, growing potatoes is made easy – in this case, with the semi-automatic potato planter.

Pulled by a tractor, the farmer sits on the planter, feeding the machine with seed potatoes, which are then planted in fresh rows. This helper facilitates and accelerates the work considerably, but it also increases crop yields and thus farmers' incomes. The higher ridges combined with deep ploughing and power harrowing are suitable for various soil types, improve water drainage in the field and lead to less weeding. Also, the seedlings are less susceptible to diseases and damage. As the potato planter ensures uniform growth and maturity, overall, the harvest is higher and of better quality.

Where does the multi-stakeholder approach come into play? The potato planter was developed by the Green Innovation Centre India together with farmers and the Indian company Rohit Krishi Industries Pvt. Limited, combining expert advice with the experience and needs of farmers and manufacturers. This type of multi-stakeholder collaboration allows farmers to point out the shortcomings of previous machines. The private sector partner was able to adapt the potato planter to farmers' requirements – for smaller fields and limited tractor power. Additionally, at a price of around 1,000 euros, the machine is more affordable, even for individual farmers.

To complete the multi-stakeholder picture, the application for testing and certification has been submitted to the government. After approval, the planter will be available to the farmers at a subsidised price through the Ministry of Agriculture and Farmers' Welfare. Thereby, individual or group ownership as well as rental services by external companies are possible options. In the meantime, the Green Innovation Centre India is training farmers on the use of the planter.

The case of processing tomatoes

India is one of the biggest tomato producers world-wide, second only to China. However, with a lack of processing varieties and economically viable production systems in India, processed products like tomato paste are rarely

manufactured and can hardly compete with cheap imports from China. Accordingly, Indian tomato farmers focus on the cultivation of fresh table varieties, which leads to another problem – the pig cycle. Whenever prices are high and weather conditions are good, farmers across India start producing tomatoes. Soon, this leads to oversupply, and prices drop. Low prices let farmers lose their interest in growing tomatoes, causing them to stop production. As less and less tomatoes are produced, prices rise again, and the cycle starts from the beginning. These fluctuations lead to unpredictable prices and income.

The Indian government is working on overcoming this trap, and the Green Innovation Centre India has identified a possible first step together with several actors: to diversify tomato varieties and to not only produce for fresh market consumption, but also for processing. The strategy is as follows: if Indian farmers can produce tomatoes for processing at an affordable price for processors, they can become independent from the volatile prices for fresh table tomatoes and are thus able to stabilise their income. As less farmers would contribute to fresh market tomatoes, prices would automatically fluctuate less as well.

The Green Innovation Centre India is testing these steps with multiple stakeholders. On the one hand, field trials with seed companies, research institutes and farmers are set up. This enables the best variety and the best cultivation practices to be determined. On the other hand, farmers are linked with local processors.

The project initiated various research and production trials of processing varieties. In the last season from October to March, the World Vegetable Center carried out research trials in collaboration with the Indian seed companies I&B Seeds and Seed Works. Additionally, the project supported large scale production trials involving about 25 farmers in association with the seed company Orbi. The trials aim to identify which variety combined with which farming practices results in the highest yields and best quality for processing at the lowest production cost.

Right from the start, the Indian company SunSip Agro Processor was involved in assessing the suitability of the produce for processing. However, the main challenge is the production costs, as VD Sarma, Executive Director of SunSip explains: “We can buy tomatoes at a maximum of 4.5 Rupees (Rs)/kg. This means that production costs of farmers cannot exceed 3 Rs/kg.” If Indian farmers cannot

reach this level, processors will fall back on the cheaper Chinese produce. SunSip Chairman Murali Krishna says: “We have been in the market since 1994. Chinese competition started in 2000. Now, the Green Innovation Centre is helping us and Indian farmers bridge this gap.” Among the stakeholders involved, it was agreed that farmers use a part of their land to grow a tomato variety suitable for processing. The processors promise to buy it at a fixed price of 4.5 Rs/kg. This gives security to both, farmers and processors (see article on page 13). Correspondingly, a major task of the Green Innovation Centre was not only to provide technical support, but to build trust between farmers and SunSip. The project enabled farmers to visit the processing plant and organised field days to demonstrate the crop to private partners.

The next steps for the Green Innovation Centre India are to conduct more trials and to better understand the potentials of the seed varieties under different conditions. The Horticulture Advisor of the Green Innovation Centre Dhananjaya BN is convinced that “only with the best varieties and cultivation practices can we help farmers to lower their production costs and get their produce sold”.

Summing up...

Both examples show that the cooperation of many different stakeholders can be rewarding and profitable for everyone. Farmers increase their productivity and income; the private sector increases its turnover and creates jobs, research institutes test their hypotheses on the ground and the state experiences economic growth. The role of the Green Innovation Centre India is to facilitate between the actors and to support the piloting of promising endeavours whose economic viability has sometimes not been proven yet.

As the focus of the Green Innovation Centre is to implement sustainable innovations, the work of the past years is sought to be integrated firmly and permanently into the agriculture and food system, even after the end of the project.

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The planter saves time for planting compared to manual labour and is more affordable for farmers than conventional machines.

Photo: Jonathan Ziebula/GIZ



Representatives of farmers, research and processors measuring the parameters of the new tomato variety.

Photo: Monika Austaller/GIZ



After harvest, the group check the quality of the tomato variety's pulp for processing.

Photo: Monika Austaller/GIZ



Women harvesting leaves from their bashok crop, which grows along the village lane in the Rangpur district in Bangladesh.

Photos: Martin Dietz

Access for women – building up a system of rural private service providers

In Bangladesh, landless women in rural communities started organising themselves for generating income. Rural local service providers linked up with market actors. Today, the associations collectively produce, process and sell medicinal herbs to pharma companies.

By Martin Dietz

Should you walk along one of the country lanes that connect hamlets in Rangpur and Rajshahi district in northern Bangladesh, you are likely to see long lines of green herbs growing on the verge. Bicycles, rikshaws and the odd motorbike use these lanes. The plants are common medicinal herbs such as holy basil, creat or malabar nut. Today, women plant herbs along more than 1,000 km of lanes.

One major constraint for extremely poor households striving to develop economically is lacking access to services. They need quality inputs for agriculture or livestock, knowledge on improved technologies and practices and the skills to use them. Skills and networks to develop and manage their market linkages as well as suitable financial products and services are also vital. Government extension services

have their capacity and resource constraints, and poor households fall off the radar of these services, particularly if they have little or no land.

Samriddhi sought to improve the well-being of poor and extreme poor households (see Box next page). Its predecessor projects had realised that access to services was a major constraint for poor households, and had already started to experiment with private, local service providers. The system evolved over the years from individual service providers who first voluntarily shared their skills and knowledge with neighbours but then charged a fee for their services. The initial focus was on technical training of poor farmers and shifted towards enabling access to lucrative markets for poor and extreme poor households by fa-

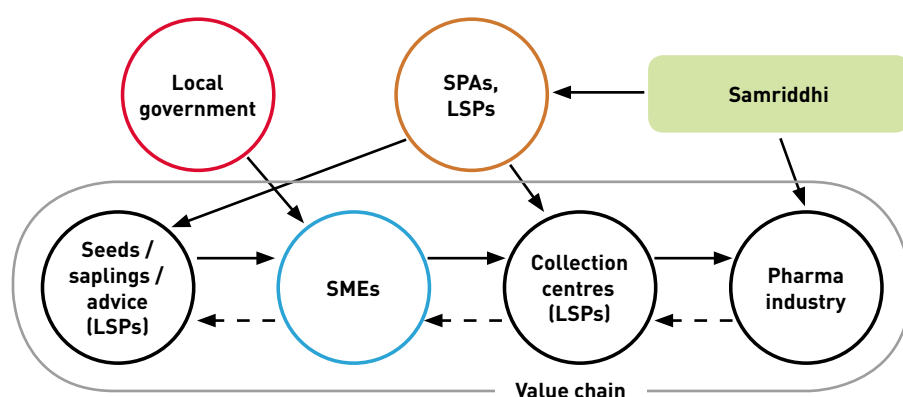
cilitating linkages with market actors. A successful business model for private rural service providers has to offer relevant services to market actors, i.e. poor producers and traders.

Local service providers (LSPs) are men and women with experience in agriculture or related fields and who live in the community they work in. They started to organise themselves in Service Provider Associations (SPAs) with around 40 to 50 members each. SPAs represent the interests of LSPs, providing on-going capacity building for their members and monitoring and identifying market opportunities for poor producers. LSP members motivate poor and extreme poor to form and organise into groups seen as small and medium enterprises (SMEs). Other roles of SPAs include linkages with private sector actors supplying

Samriddhi (stands for prosperity in Bangla language) was a project of the Swiss Agency for Development and Cooperation that was implemented by Helvetas Swiss Intercooperation. The project grew out of two predecessor projects. *Samriddhi's* first phase covered the period 2010 to 2014.

The project's goal was to contribute to sustainable well-being and resilience of poor households through economic empowerment in Rajshahi and Rangpur Divisions as well as in the Sunamganj District in the north of Bangladesh. The project was based on the impact logic that making public and private services available for business development empowers and capacitates, that poor people are to access these services and that if an enabling environment for pro-poor economic growth exists, poor people can generate additional income and overcome their poverty situation in a sustainable manner. *Samriddhi* applied an explicit market systems approach and aspired to reach one million households through its interventions by April 2014, focusing on poor and extreme poor men and women in Sunamganj District in the north of Bangladesh.

Market system for medicinal plants



LSPs – Local service providers
 SPAs – Service Provider Associations
 SMEs – Small and medium enterprises

farm inputs (seeds, veterinary medicine, crop protection chemicals). Moreover, the SPAs link to output markets and connect their LSP members for training provided by private sector companies. SPAs also link SMEs with financial service providers such as micro-finance institutions and banks. SPAs and SMEs sign service agreements defining the scope of the support poor producers need and the price of the services. Furthermore, the SPAs generate their income from commissions on the fees of service providers, input supply and some outputs and rental fees for agricultural equipment which the SPAs own. LSPs provide a service package to poor and extreme poor in support of their enterprising activities in selected value chains and subsectors. By 2015, more than 4,000 trained LSPs were working in the *Samriddhi* project area, 21 per cent of them women. Half of them work full-time and can manage their livelihood from their income. They have provided direct services to over 650,000 people, with an additional 350,000 benefiting indirectly.

Samriddhi's underlying assumption was that once project support was withdrawn, LSPs supported by the SPAs would continue to form and assist new SMEs, driven by their financial interest to obtain fees and commissions. One explicit goal of the *Samriddhi* project was to strengthen women's economic empowerment. It became an element in the project cycle, the logical framework, the indicators and baselines. Women in northern Bangladesh are particularly constrained by limited mobility, lack of decision-making power and the time they need to manage the household. Selecting suitable value chains and existing women LSPs have played an important role in the process of economic empowerment of women.

Providing access to public land

In 2007, the predecessor project of *Samriddhi* brought together producers, traders and buyers. The pharma company ACME expressed interest in purchasing *bashok*, (*Adhatoda zey-*

lanica, Malabar nut), *tulsi* (*Ocimum sanctum*, holy basil) and *kalomegh* (*Andrographis paniculata*, creat). Cultivating medicinal herbs for ACME could have been a real opportunity for women, generating good income and requiring only a few hours of work during the day. The problem was that many of the poor households did not own or had no access to land, or the land was unsuitable for growing medicinal herbs (e.g. contaminated with pesticides).

Roadside and public fallow land is owned by the state. The *union parishad* (local government) is expected to lease such land to landless people. But all too often, it is grabbed by local elites. Rural communities lack the knowledge and confidence to approach local officials and negotiate the leasing of public land.

However, advocacy and negotiation skills improved through training sessions enabled the SPAs to discuss leaseholds for medicinal herb production with local councils.

The initiative took off once private pharma companies agreed on co-financing and conducting technical training for LSPs and establishing collection centres for aggregating, drying and primary processing carried out by producers. Village-based collection centres were important for women producers who would have been unable to travel alone beyond the village boundary. Eventually, the initiative gained the support of local government officials, and groups of poor households were issued leasehold contracts.

Poor households took up medicinal herb production with the support of LSPs and their SPAs. Pharma companies increased and expanded financing collection centres in more areas, enabling more and more women to sell their produce at the collection centres and directly receive payments. While the project no longer provided inputs, companies raised prices of the producers' goods. Furthermore, ACME has been offering a prize of at least 10,000 Taka (1 Taka is equivalent to 0.01 euros) to the group producing the highest amount of herbs.

“Whatever the producers are able to provide, we will buy” for two main reasons – sourcing locally is much cheaper and we get higher quality, as the inputs are more readily controlled,” says Abdul Salam, Assistant Manager in ACME. The company insists that no pesticides are used and that only organic fertiliser is applied. And it makes a special effort to support landless women.

The experience of women producers – Polashbari Medicinal Plants SME

This group has 21 members 17 of whom are women. In 2012, the SME started to cultivate *bashok* along village roads for which they obtained a leasehold from the local council. In the second year, they started to intercrop *tulsi* in between *bashok*. With the income from the *bashok* harvest in the previous year, they have leased crop land and are cultivating *kalomegh* and *ashwaghanda*. Labour input is small – group members estimate that they spend an hour a week looking after the plants. *Bashok* leaves can be harvested three times a year and are dried and delivered to the collection centre.

The group generated a total income of 6,000 Taka in their first year. The following year, their sales went up to 50,000 Taka. In 2015, they harvested 20,000 kg of *bashok* at a value of 650,000 Taka. The income during the initial phase was saved and invested in expanding the following year's production.

Potentials for scale

The demand for medicinal plants is high, and the potential supply through the planting of under-utilised roadsides by landless women is also high. Yet, there can be an inverse correlation between reaching scale and reaching women – in that once a value chain is perceived to have major economic potential and/or requires a presence in markets a little way from the producer, it is more likely to be dominated by men.

By the end of 2015, about 60,000 producers were growing medicinal herbs on roadside and fallow land. Most of them were disadvantaged and poor women.

Additional private companies and small enterprises joined producing and processing medicinal herbs, expanding their geographical coverage beyond the initial northern part of Bangladesh. Better horizontal and vertical coordination of actors led to product and process upgrading either through better organisation of the production process or the use of improved technology. Poor and disadvantaged women and men diversified the species of medicinal herbs. They started growing *bashok* and then added four species: *kalomegh*, holy basil, asparagus and *ashwaghanda*.

For its implementation of the *Samridhhi* project, the Second Herbal World Global Exhi-

Nur Un Nahar Begum, a member of the Polashbari group

Nur Un Nahar Begum is now in her early thirties. She and her husband were landless and homeless when they got married. Keen to improve their situation, Nurun Nahar took out a small loan from a micro-credit organisation to buy a sewing machine and start tailoring. With the money made from tailoring, the couple managed to buy some land

for 20,000 Taka. Then Nurun Nahar heard about cultivating medicinal plants and started growing herbs along roadsides with the Polashbari group. In addition, she set up her own small nursery, producing 1,000 plants selling at three Taka a plant. She estimates that the medicinal plants and her sewing each bring her a monthly income of about 6,000 to 8,000 Taka. With this income, she has installed a hand-pump for drinking water and bought some livestock.

Nur Nahar, a Local Service Provider

LSP Nur Nahar is a resident of Polashbari, and was trained by the private company ACME in medicinal plant cultivation and handling. Once a year, ACME extension workers, including LSPs, are invited for a workshop to update them on new technical and market developments.

Nur Nahar operates a nursery on leased land on which she produces seedlings of *kalomegh* (creat) and *ashwaghanda* (Indian ginseng), which she sells to SMEs. She conducts training workshops on herb cultivation for SMEs in her area and meets with them at least once a week. She charges only for formal training events.

The LSP operates a collection centre to which 3,500 SME members deliver five species of medicinal plants. ACME has provided the LSP with quality standards for the dried plants and the methods to measure the quality of the goods she checks. If required, the LSP will dry the material further. She then cleans, packs and stores it. ACME collects the material once a week. Payment is a week later, and the LSP gets three Taka commission per kg of dried material.

Her income as an LSP has increased to 20,000 Taka a month. "I have gained a lot of experience and confidence as well as networks to work beyond our communities," she says. "With the help



Local Service Provider Nur Nahar, in front of the collection centre.

of my SPA, we explore new markets for medicinal plants. For example, we are interested in marketing *tulsi* tea as a new product and expanding medicinal plant cultivation activities to other areas of Gaibandha district. We want to include more poor and extreme poor households. By supporting them, we are supporting our communities and ourselves. We will lease land for cultivating high-value medicinal plants. We are positive about the future."

tion and Conference, held in Malaysia in September 2014, conferred Helvetas an award. International and national actors and players – from development agencies to international organisations – have started replicating the success of the initiative.

Challenges for the future

The main challenge will be supporting women producers in gaining a fair wage reflecting the value of the crops produced. Women engaged in value chains generally welcome the opportunity to make some money, often to supplement their income. However, promoting exploitation or gross inequality in benefit distribution is a different matter. Thus, for example, whilst the rapid growth of the medicinal plant value chain may be considered a huge success in terms of giving many landless women the opportunity to earn a little cash, more could still be done to increase gains for women producers. The benefits of private companies in sourcing medicinal herbs nationally are

huge when compared with sourcing medicinal herbs through supply chains from India, Nepal or China.

Through *Samridhhi*'s facilitation, private companies involved in medicinal plant production have decided to increase the price for herbs, in addition to substantially contributing to the expansion of multi-purpose collection centres. These centres closely located to producers accelerate the delivery of leaves to the company, and vice versa for the company to supply inputs and advice. Thus overall, they enhance producer productivity while making matters easier for the women.

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Making poultry great again!

One typical African phenomenon is an aging farmer's population. But not in Nigeria, where Young Chicken Farmers' Clubs are being set up to revitalise the interest of young people in poultry keeping.

By Adelaja Adesina, Adenola Jibodu, Samuel Adediran and Samuel Abanigbe

For a long time, agriculture was the backbone of Nigeria's economy. Around 1958, the discovery of crude oil brought about the gradual decrease of agricultural entrepreneurship. Consequently, the oil business became a new bride to the Nigerian populace, including the youth. Nowadays, crude oil accounts for about 95 per cent of Nigeria's foreign exchange receipts. But recently, because the price of crude oil has been falling steadily on the international market, there has been an economic meltdown. Hence the reality of a possible crippling budget shortfall is evident. The cries from the past and present government administration for economy diversification in order to relieve the oil sector from its overbearing role cannot be overemphasised.

The current traditional farming system

Nigeria's traditional livestock farming is characterised by an aging population of farmers that do not have enough agricultural inputs and

revenues to support their farming livelihood. Moreover, little output, a lacking marketing system, and poor linkage and supporting systems have brought about low returns on investment for rural farm families. The traditional farming population has shrunk because of the menace of rural-urban migration coupled with the fact that older farmers are dying in great numbers. This phenomenon has created a vacuum in the national effort to increase agricultural productivity over the years. Hence, the need to transform the traditional agricultural sector has become imperative. Recent intervention programmes of the Federal Government of Nigeria, such as the Agricultural Transformation Agenda and the Agriculture Promotion Policy, are designed to incentivise small-scale farming and shall encourage especially the youth to return to agriculture. The concepts are based on value addition to local agricultural produce as well as rural infrastructure and agribusiness development. Special emphasise should be given to agricultural entrepreneurship development.

However, the interventions have not yet delivered on their mandate. Studies have shown that the majority of agrarian populations are not finding farming attractive due to low returns on investment. In order to tackle food security and to contribute to national income generation, farming practices have to be rejuvenated from the base. Consequently, domestic food and nutrition security will be improved and a sustainable income and job growth supported.

Creating the Young Chicken Farmers' Club

Against this background and the challenges of traditional livestock farming, the Nigerian NGO Bdelium Consult Ltd. (BCL) developed a sustainable traditional livestock business model by facilitating the setting-up of the "Young Chicken Farmers' Clubs" (YCFC) to rekindle interest in the smallholder poultry system as well as raising a new generation of



chicken farmers who see poultry as a business. Financed by the Global Alliance for Veterinary Medicines (GALVmed) and implemented by BCL from July to October 2017, the YCFC is a subproject of the overall “Smallholders Poultry Business Development Project” also run by BCL.

The beneficiaries of the programme were pupils between nine and twelve years, taking part with their parents’ consent. They were at the centre of the YCFC and were trained to rear chicken and thus revitalise poultry production, albeit at small-scale level. In addition, the number of chickens within the project area was sought to increase, and the engagement and interest of the farmers in vaccination and deworming practices was to be improved.

After training sessions conducted by BCL, each of the pupils was given 15 day-old cockerels (DOCs). Since the extension service in the region is constantly understaffed, Community Poultry Agents (CPAs) were appointed in the communities to support the pupils throughout the process. The selection criteria for the CPAs were having a certain standing to adequately communicate with the community and being literate. Since the CPAs will gain access to vaccines, BCL trained them in vaccinating the chicks. Additionally, CPAs act as aggregators and form the base of the support system – they visit the young farmers every few days to observe the chicks’ development and educate these pupils on brooding systems, feeding as well as preventive healthcare and sanitary measures. The CPAs also arrange access to the market to sell the chicken.

Setting up the club step by step

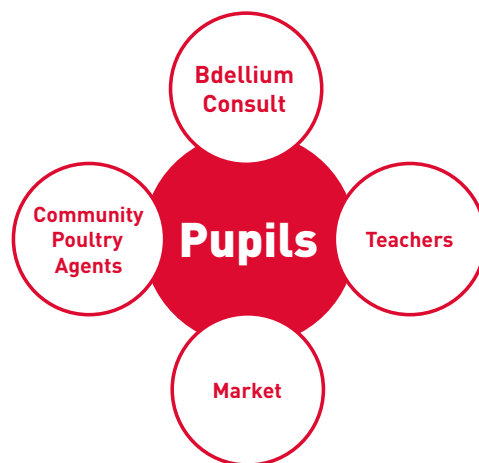
A multi-stage sampling procedure was used to select the locations and a total of 240 participants. Ogun, Osun and Oyo states in south-west Nigeria were chosen, based on the proximity of their communities. This facilitated the project logistics and exchange between the different stakeholders. The second stage involved the purposive selection of two communities of each state that were prominent in the business of the overall Smallholders Poultry Business Development Project. The third stage was the systemic selection of two primary schools from each community. In consultation with the school’s management board and the parent teacher association facilitated by the CPAs, the schools were selected. In the fourth stage, three best female and male pupils respectively in agricultural science from class four to six were chosen, making 18 pupils in each of

Climate and agriculture in Ogun, Osun and Oyo states

The YCFC programme was carried out in Ogun, Osun and Oyo states in south-western Nigeria. In all three states, the climate is humid and tropical with an average temperature of between 24°C and 25°C. Rainfall patterns vary from an average of 120 cm per year in the southern part to an average range of 80 cm to 150 cm in the northern part. There are two distinct agro-ecological zones – humid forest and derived savannah. The major crops cultivated there are yam, cassava, maize, rice, vegetables and cash crops such as rubber, cocoa, kolanuts and citrus. Rural households in the intervention area rear sheep, goats, village chickens and pigs. Village chickens are genetically diverse and not highly bred, and are thus robust, with a stable immune system. They are mostly reared for the higher quality lean meat. In turn, the nutrition of the rural communities is improved by a higher protein intake. Moreover, every household has two to three village chickens which are fed organically. These chickens are also seen as part of the community. In addition, intensive rearing of cockerel, layers and broilers has become popular.

twelve schools. An agricultural science teacher and one CPA were attached to each school to provide required support on how to run a sustainable business.

YCFC Operational Actors



The operation shown in the Figure above indicates training sessions for the pupils along with CPAs and teachers providing both the psychological and social support for primary inputs, for example the handing out of the DOCs. In order to take care of the chicken during the meat production phase, the parents of the pupils were involved in the training to serve as a guide and source of supplementary funding for the sustainability of the innovation. The operation was cyclical; it ran from BCL to the market interchangeably. Every actor had a role to perform in ensuring the operations and achieving its set objectives. BCL’s role was to provide inputs and organise the training for the CPAs and other technical support that ensured the chain was not cut at any point. On the one hand, the CPAs and teachers assisted the pupils, where the CPAs saw to it that all the

inputs required in rearing the chicks to market weight were supplied to the pupils. And the teachers provided the technical know-how of poultry farming and preventive sanitary measures to sustainably strengthening the chicks’ immune system. These principal stakeholders were interlinked to ensure that chicken are delivered to the market at the right weight, price and time.

Tri-partite training for young farmers

The training of the pupils followed specific targets. The number of chicken surviving per flock per household after eight weeks compared to the number of natural brooding systems should increase. To reduce the high rate of chicks’ mortality depending on predators, thefts and adverse weather conditions that favour diseases, the pupils were trained by BCL supported by CPAs, and the teachers in artificial brooding systems. The brooding standards were developed accordingly. These comprised the use of cardboard brooders, taking a small container as a coal pot to supply heat for the chicks, and bottled water containers as improvised feeders and drinkers. Practices of vaccination against Newcastle disease (see Box next page) using an intra-ocular medium (a drop in the eye) and Gumboro vaccines applied by trained CPAs, mixing glucose in drinking water to enhance the energy ratio in the chicken’s nutrition, as well as the application of ethno-veterinary medication (e.g. mixing ginger and garlic paste in the chicks’ drinking water) were introduced to improve the immunity of chicks against bacteria and protozoans.

Lessons learnt and what next?

Working with locals such as agricultural science teachers and CPAs who understand the



Selected pupils receiving 15 day-old cockerels in school.



Training for pupils on poultry farming and disease prevention and control.

Photos: Bdelium Consult Limited

terrain of the communities has promoted a harmonic relationship aiming towards achieving grassroots agricultural development in the communities. Interaction among the stakeholders has given a reasonable level of success in which all the stakeholders, including the parents, have acquired knowledge of artificial brooding using locally available materials to raise chicks from DOCs to post-brooder age. By and large, agricultural development efforts should follow bottom-up approaches in order to achieve the desired impact.

Looking at the achievements and results of this pilot programme, there are three recommendations when scaling up the approach to a higher level.

First, the YCFC approach should be integrated into the primary education system, which was selected to catch the young entrepreneur from the beginning of their learning career and imbibe the culture of animal husbandry into the children. This culture might stimulate their interest in agricultural ventures. During the YCFC training, we observed that households were interested in the business of small-scale chicken production using simple, available and affordable production systems but were challenged with incidences of diseases, theft and a high rate of chick mortality. Second, village chicken farmers should be sensitised on the use of simple artificial brooding systems for their chicks' productivity. In order to sell post-brooder chicks for growing to other households, a sustainable marketing platform has been established. Furthermore, market opportunities for sales of feeds and medication in smaller units to farmers or households has been created. And third, the use of ethno-veterinary products should be promoted among smallholder farmers to strengthen the chicks' immune system.

The brooding period lasts for eight weeks. After this period, about 33 per cent of the young farmers raised between 11 and 13 post-brooder chicks from the 15 DOCs in their flocks. Between 300–350 Naira (0.75–0.85 euros) was offered for the post-brooder chicks at local markets.

Thanks to the interaction of BCL consultants, CPAs, teachers and pupils in setting up a network and support system, the households benefited in terms of alternative income to their basic expenditure and enriched their meals with protein.

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A Community Poultry Agent vaccinating a chick against ND by putting a drop in its eye.

Newcastle disease

Newcastle disease (ND) is a highly contagious and often severe disease found world-wide that affects birds, including domestic poultry. It is caused by a virus in the family of paramyxoviruses. It usually presents itself as a respiratory disease, but depression, nervous manifestations, or diarrhoea may be the predominant clinical form. ND is transmitted most often by direct contact with diseased or carrier birds. Infected birds may shed the virus in their faeces, contaminating the environment. Transmission can then occur by direct contact with faeces and respiratory discharges or by contaminated food, water, equipment and human clothing. The disease is very contagious. When the virus is introduced into a susceptible flock, virtually all the birds will be infected within two to six days.

Source: World Organisation for Animal Health (OIE), 2019.

Private sector development and international trade in The Gambia

The tiny West African country The Gambia is striving to export its crops globally. This demands a range of organisational, regulatory and infrastructural efforts, which means tackling everything from pests and yields to policy and logistics. The cashew, sesame and groundnut farmers are benefiting from the interaction of stakeholders from the agriculture, research, trade and logistics sector, and this contributes to an upswing in private sector development.



Following harvest, Alieu Faye takes his cashew nuts to be weighed and sold to processors. Adding value to cashews through processing is part of the government's strategy to increase its trade capacity and proceeds from its agriculture yields.

By Deanna Ramsay

Despite being one of Africa's smallest nations, The Gambia has a lot of room to grow. Having experienced a democratic change in the government in 2017 after 22 years, the country is making it clear that it is open for business. This means a fresh and inclusive trade agenda that aims to improve life for the Gambian people, half of whom live below the poverty line and are largely dependent on agriculture.

"Thirty per cent of The Gambia's GDP is agriculture, and 70 per cent of the people are employed in the area of agriculture. Now, there is this effort being made to improve the value of agricultural products apart from the

raw products. We are now trying to add value particularly in the area of cashew, sesame and groundnuts," said Gambian Minister of Trade, Industry, Regional Integration and Employment Isatou Touray in an interview in the country's capital, Banjul, in May 2018. In addition to adding value, the country is looking to increase its agriculture exports to improve the economy. But, the move from sustenance to international trade is a complex one, involving a diverse range of individuals and organisations from farmers and processors to policy makers, trade officials and the development community. Having identified cashews, sesame and groundnuts as local prod-

ucts with global potential, The Gambia and its partners are working to get them from fields to marketplaces the world over.

Alieu Faye has been cultivating cashews for over 20 years. Following a training in cultivation techniques, his ten acres on the north side of the Gambia River have started yielding more. Thus, he created a nursery that is lush with seedlings he is prepping for planting. The training that Faye and others attended was an outcome of the Enhanced Integrated Framework (EIF) trade studies of The Gambia in 2007 and 2013 that noted cashew's growth and income prospects, as well as those of sesame and groundnuts. Recommendations to

ready the crops for export included increasing yields to quantities sufficient for export, enhancing quality, reducing post-harvest losses and proper storage. With the country having foregrounded cashew, sesame and groundnuts as part of its trade strategy, on-the-ground efforts by the government in partnership with EIF and others include working with farmers to improve seed selection and the use of fertiliser, ensure water availability, correct plant density and handle harvests in better ways. Faye used these methods with his cashew crops and has seen results. This has inspired him in his role as President of the Federation of Gambia Cashew Farmers Association to encourage other farmers across the country to grow cashews. “I’m retiring very soon to concentrate on cashew farming – so retiring from my actual work and going to the cashew farm means that cashew is very valuable for me,” Faye said at his nursery. “If you want an easy life, grow cashew,” he added.

Processing, safety standards and private sector development

Buba Jawneh manages his family’s cashew enterprise, which dries, bakes and packages nuts for local and international consumers. Having been in business since 2008, when his father decided to expand from cashew farming, the Jawneh & Family Cashew Processing Enterprise supports an extended family and employs approximately 40 people. According to one cashew farmer, raw cashews sell locally for approximately 3,000 dalasi (USD 60) per bag holding about 85 kg. Processed cashews, on the other hand, can sell for between 5,000 and 10,000 dalasi, offering an incentive to add value in order to increase profits.

One important step in enhancing the country’s exports of cashew, sesame and groundnuts is the commercialisation of the industry, in part through supporting processing abilities, access to the technology needed to develop export quality items and certification so that products adhere to international standards. Small businesses struggle with all of this, including complying with the international food safety and quality standards required to export. Assisting small businesses such as Jawneh’s with machinery and accreditation helps to ensure that business across borders can occur, and is part of the work being done by a range of organisations in order to improve local incomes and facilitate trade.

As part of a target group of cashew producers identified for support by the Ministry of Trade,

Industry, Regional Integration and Employment (MOTIE) and the National Food Security Processing and Marketing Corporation (NFSC), Jawneh now has the necessary Hazard Analysis and Critical Control Point (HACCP) certification. He also has packaging and branding materials following this partnership stemming from EIF support, as well as processing equipment provided by the Food and Agriculture Organization of the United Nations (FAO). “In order to expand the business, we would like to have partners to increase the processing facility. And we would then like to have finance to secure more cashew nuts from the farmers so that we can do year-round cashew processing,” he said. He is looking to larger ovens so that they can deliver even more to buyers, and with access to loans, the ability to produce even more processed and packaged cashews, thereby gaining new customers across the world.

Facilitating logistics, storage and export

Saloum Malang is the Deputy Managing Director of Gambia International Airlines, which manages a new cargo centre at Banjul International Airport. The centre, with storage space for both perishable and non-perishable goods, is a part of efforts to strengthen the country’s participation in regional and global markets. “Trade is important in our economic development, and one of the pre-requisites for economic development is having a good airport,” Malang said. He added, “First, it gave us the relevant and required security facilities. Second, it gave us the operational facilities that are also needed to operate as a cargo. We are very proud.”

At the 2018 launch of the centre, which EIF helped to build, the institution’s Deputy Executive Director Annette Ssemuwemba said:



Alieu Faye sitting between his cashew seedlings on his ten-hectare farm.

Photos: Olivier Girard/EIF

“This will provide The Gambia with the opportunity to expand their volume of exports and a brighter trade outlook. The EIF looks forward to continuing to work with the government as it expands into new markets.” The facility in Banjul is expected to reduce handling times for a range of goods by as much as 50 per cent through the combination of improved infrastructure, better trained airport staff and increased services to small- and medium-sized enterprises. A new scanner allows large pallets to be easily prepped in accordance with International Air Transport Association safety standards, and will speed up the export process. The cold storage enables the transport by air of agricultural products that require a cooling system, something that could not occur before.

Aflatoxin in groundnuts – minimising health and economic impacts

In agricultural systems, issues can emerge that require coordinated responses, and that impact trade flows. Aflatoxin, which is produced by a fungus that is found in crops in humid places, is a health danger when consumed, leading to liver cancer and developmental problems in children. The Gambia’s groundnut, maize and rice crops have been affected, resulting in an estimated 22 million USD in losses since 2000 stemming from export limitations and affected groundnuts being downgraded to bird food – and therefore selling for lower prices. “The



Buba Jawneh manages his family's cashew processing centre. The only limiting factor is the amount of cashews they can roast at one time in their oven.

international acceptable levels of aflatoxin allowed in groundnut in the European Union is four parts per billion. For The Gambia, the measure of aflatoxin can reach 20 parts per billion or more, so because of that, since 2014, Gambian groundnuts have been unable to access markets in the EU," said Abdouramane Diallo, from the Policy and Partnerships division at the International Islamic Trade Finance Corporation (ITFC), which, together with EIF, is supporting work to protect the country's groundnuts and as a result people's health, and to ensure export access.

The NFSC is implementing the pilot together with MOTIE in the country and managing work with farmers. An initial group of 6,936 farmers were provided Aflasafe, a combination of fungal strains that prevents aflatoxin from infecting crops. Pilot farmers were identified by their fields having aflatoxin levels four to five times higher than the national average. They were given trainings in the proper use of the product, which includes applying it over fields two to three weeks before flowering. The first round of testing on those harvests has measured aflatoxin at between zero and four parts per billion, meaning that the nuts are now safe for export to the EU. As a next step, the NSFC will be purchasing those harvests directly from the farmers at a premium and facilitate initial exports to the EU.

The first phase of this work has shown that coordination is key to most efficiently assisting

farmers, and to allowing their crops back in the EU. EIF's partnership with the 47 least developed countries, of which The Gambia is one, involves close work with ministry partners and ensures complete government ownership. Success with farmers on the ground required NSFC and MOTIE collaboration, and the pilot work of purchasing groundnuts from farmers for export has shown that proper planning and timing are essential.

The non-traditional coalition with ITFC means that trade finance has worked well alongside trade development to achieve impacts in a short amount of time.

It is also an example of the range of actors involved in both food systems and trade, with scientists at the International Institute of Tropical Agriculture (IITA) having developed Aflasafe for use in the host of countries affected by aflatoxin, and it is proving to be the answer for the country's groundnut export issue. In The Gambia's pilot work, the NSFC purchased Aflasafe from IITA. The Agriculture Plant Protection Services (APPS) and National Agriculture Research Industry (NARI) are providing the training of trainers. The Department of Agriculture extension service is deploying staff locally and administering Aflasafe training to farmers, and it is assisting the NFSC in testing harvests for aflatoxin. The entire effort sits at a critical space where food, public health and trade intersect. More clean groundnuts means more export markets and more income for farmers, as well as health impacts that are impossible to quantify.

"ITFC is technically a trade finance institution, and trade finance products are a shorter-term instrument. But we are also a trade development institution. The combination of the two offers great potential to achieve concrete developmental objectives in a very short period of time. As a matter of fact, in addition to the grant and international support mobil-

ised for the aflatoxin mitigation programme, ITFC provides 20 million US dollars in trade finance every year to the Gambian groundnut industry," Diallo said.

The way forward

At The Gambia's Trade Policy Review in 2018, a regular exercise that is part of World Trade Organization (WTO) agreements, the country's potential was highlighted, and it was noted that The Gambia receives lower levels of development assistance than similar countries. As one of the poorest countries in Africa, The Gambia's economy is heavily reliant on services and particularly tourism. But the tourism industry was badly hit by the Ebola outbreak in the region, and lack of infrastructure and debt have been hindrances to growth. To properly spur growth, strong coordination and support from a host of partners that includes donors, the development community and the private sector is of utmost importance. The EU is The Gambia's main donor, allocating EUR 150 million in the 11th European Development Fund between 2014 and 2020.

With economic diversification seen as a solution for the country, the cashew and groundnut examples show how much and how many people and institutions are needed for impact, but that transformation can happen. Groundnuts are an important export commodity for The Gambia. The campaign against aflatoxin is seeing results, with the hopes that application of Aflasafe can be expanded throughout the country, resulting in crops being sold at higher prices for export and alleviating the health impacts in the population from aflatoxin consumption. For cashews, additional work with farmers to increase yields and reduce losses will be needed, as well as support for cashew processors, who face the constraints of many small businesses owners in accessing the right technologies as well as finance. "In cashew production – a crop that is part of the government's diversification of its agriculture – we are trying to see how we bring everybody together in order for us to create that critical mass for export going with the standards, with the quality and all the other processing value chains that are necessary to attract the right markets," Touray said.

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“ A response to the article “Divorced from reality” ”

In his Opinion article “Divorced from reality” in the previous Rural 21 edition, our author Ingo Melchers accused some of the German NGOs and church relief organisations of lacking strategies to address the problems of African agriculture. A riposte.

By Bernhard Walter and Sarah Schneider

In his article “Divorced from reality”, author Ingo Melchers criticises German church relief organisations MISEREOR and Bread for the World and VENRO, the federation of development cooperation and humanitarian relief in Germany, for applying the wrong “recipes” to rural development and agriculture in Africa. First and foremost, he alleges that the church relief organisations are critical of industrial agriculture and instead prioritise a vague concept of agroecology. Second, he claims that they do not focus sufficiently on productivity increases and are opposed to the use of chemical fertiliser. Third, he states that the German church relief agencies and many non-governmental organisations apply European standards to African development, neglect to conduct country-specific political analysis and fail to recognise African partners’ autonomy. And fourth, he claims that many NGOs have entered into an “unholy alliance” with old elites in developing countries that display no interest in eradicating poverty.

It certainly makes sense to reflect critically on one’s own positions from time to time and engage in spirited debate about the best way forward on rural development. It is for this very reason that the German church relief organisations and NGOs are involved in an ongoing and constructive dialogue with Germany’s Federal Ministry for Economic Cooperation and Development (BMZ) and Federal Ministry of Agriculture and Food (BMEL), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and academic institutions. Sadly, Ingo Melchers’ opinion piece fails to make a constructive and objective contribution to this discourse. Instead, throughout the text, he presents isolated and randomly chosen excerpts from papers by the church relief organisations – out of context – in an attempt to demonstrate that their strategies are the wrong ones. And without a shred of evidence, he implies the existence of relationships – for example, to the old elites in developing countries – that bear no resemblance to reality. The motives for this verbal assault on Bread for the World

and MISEREOR are unclear. The accusations themselves attest to a lack of knowledge of the two organisations’ programmes and projects and a failure to grasp how their relations with their partner organisations in Africa, Asia and Latin America actually work.

Take, for example, the statement that the two church relief organisations decide on behalf of, or lack respect for the autonomy of, African farmers, consumers, democratically legitimised governments and parliaments. This assertion has no basis in fact. On the contrary, all programmes and projects are initiated by local partner organisations and are then developed and implemented through cooperation and dialogue. It is not a one-way street but a mutually enriching process of shared learning, based on the recognition that it is the partner organisations that have the requisite skills and expertise, acquired through decades of work under often very challenging conditions and with little government support, to improve rural development and agriculture in the African countries. Strengthening these capacities is one of the main tasks of non-governmental development cooperation.

Despite his wholesale criticism of agroecology, the author does not appear to be fully conversant with the concept, claiming, for example, that it is not clearly defined or verifiable with straightforward criteria. In point of fact, the Food and Agriculture Organization of the United Nations (FAO) has defined 10 Elements of Agroecology, which are also endorsed by the FAO’s Committee on Agriculture (COAG), not least because agroecology can contribute positively to 15 of the 17 Sustainable Development Goals set out in the 2030 Agenda.

Linking in with the international debate and local experience, many NGOs and church relief organisations have explained the concept of agroecology in detail in a joint paper and, moreover, have clearly identified the political interests that stand in its way. The author also



Bernhard Walter of Bread for the World

Photo: Author



Sarah Schneider of MISEREOR

Photo: Author

appears to have overlooked the fact that agroecological concepts now enjoy broad political support, as shown, for example, by the motion tabled by the parliamentary groups of the coalition parties and adopted by the German Bundestag's Committee on Economic Cooperation and Development in May 2019. This motion calls on the German government to give more support to harnessing the potential of agroecology to contribute to the Sustainable Development Goals.

Contrary to the author's opinion, aspects such as soil fertility, incomes and farm-based innovations in fact play an important role in agroecological systems. Various impact studies have investigated how agricultural systems affect productivity and incomes, taking into account the complex realities facing family farms and smallholder households. For the poorest ten per cent of households, agroecological methods are proven to have particularly positive impacts. Agroecology promotes a closed loop economy, maximises the use of locally sourced renewable resources and aims to reduce dependence on externally procured inputs. A focus on environmental impacts is also important, alongside factors such as costs and debt risk. So it is not about adhering to dogma: it is about supporting locally appropriate, holistic solutions. The reality is that even mineral fertilisers will only be effective once sufficient attention is paid to soil fertility, humus management and organic manuring.

All these various agroecological strategies make an important contribution to increasing productivity and incomes. However, it is generally recognised that other factors, besides productivity increases, are important in improving conditions for rural communities. These factors include the availability of adequate land for smallholder families, access to water and peasant seeds, good infrastructural development and reliable marketing outlets.

One of the greatest challenges facing agriculture is climate change. Here too, the potential of agroecology, e.g. in the form of agroforestry systems, is widely recognised. Locally appropriate smallholder farming that is aligned to agroecological principles can reduce poverty, hunger and malnutrition. By contrast, large-scale industrial-style cropping systems – which also exist in African countries, growing products such as oil palm or sugar cane as bioenergy feedstock – and plantations (tea, pineapple, coffee, etc.) have made a fairly modest contribution to eliminating poverty and hunger thus far. In its assessments of cooperation with the private sector in agriculture, the German

Institute for Development Evaluation (DEval) concludes that communities living in extreme poverty do not benefit directly from support that mainly prioritises market access. DEval therefore underlines the need to implement other more appropriate measures.

Lastly, the basis for Melchers' generalised claim that many NGOs display hostility towards business and technology is unclear. MISEREOR and Bread for the World support numerous projects and programmes that include cooperation with businesses. Whether the emphasis is on fair trade, establishing food processing and marketing cooperatives or facilitating improvements in animal husbandry together with the private sector, what is important is that farmers, male and female alike, should be able to interact with companies on equal terms, that they are not disadvantaged and that the partnerships are financially viable. Similarly, promoting appropriate technologies, such as the use of draught animals or single-axle tractors in rice cultivation, is well-established as a means of supporting agricultural development in systems that rely mainly on smallholders. However, these technologies must be deployed with care, and good-quality technical training for farmers (female and male alike) is required to avoid adding to the heaps of unused agricultural machinery and equipment rusting away in Africa.

The development cooperation undertaken by the church and non-governmental relief organisations is subjected to generally well-intentioned and constructive criticism and scrutiny by numerous donors, other development institutions and, indeed, partner organisations on a daily basis, inspiring us to improve our toolkits and strategies. It is regrettable that such constructive guidance on improving the work of the non-governmental development and church relief organisations is noticeably absent from Melchers' article.

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The organisations' joint paper on agroecology can be downloaded at:

www.misereor.org/fileadmin//user_upload/misereor_org/Publications/englisch/position-paper-strengthening-agroecology.pdf

FIGHTING FARMER SUICIDES IN INDIA THROUGH A HELPLINE

By Jency Samuel



The wife and parents of a farmer who committed suicide in India.

Photo: Jörg Böhling

With erratic monsoons leading to crop loss and financial problems, farm distress continues in India. A telephone helpline counsels farmers on the brink and addresses the root causes to alleviate problems and prevent farmer suicides.

Sreeharsha Thanneru remembers the day when farmer Mallappa Tandra called the *Kisan Mitra* helpline. Mallappa was sobbing inconsolably. The rains had failed, there was only little water in his bore well, and he could not get the drip irrigation system that would save his standing crop. When Sreeharsha tried to counsel him, Mallappa repeatedly mentioned suicide as his only recourse.

Mallappa had gone to the administrative block office to apply for the government's subsidy for a drip irrigation system. When he learnt that he was not eligible, he was too dazed to decide what to do. Someone who observed his distress suggested that he call the *Kisan Mitra* helpline. That is how he got to speak to Sreeharsha, the programme coordinator at *Kisan Mitra*.

Distress among farmers is high in central and parts of southern India. Erratic monsoons, repeated crop losses, difficulty in getting institutional loans due to a lack of land documents, and hence falling in debt traps with private creditors are the main drivers. Factors such as

illnesses in the family and a lack of educational support for children add to the stress. When overwhelmed by difficulties, the farmers resort to ending their life. *Kisan Mitra*, which translates as farmers' friend, counsels the farmers, and coordinates with the respective government departments to address the issues that cause distress.

Farmer suicides

Agriculture is the primary livelihood for more than 55 per cent of India's population, and farm distress has been a continuing problem. The National Crime Records Bureau, which collects data on suicides in general, started gathering statistics specifically on farm suicides in 2014. As per the latest data available, farm suicides, which had accounted for 8.7 per cent of the total suicides in the country in 2013, increased to 9.4 per cent in 2015.

The state of Telangana, particularly the southern part where the *Kisan Mitra* helpline op-

erates, reported the third highest number of suicides among all states of India, with 1,400 in 2015 suicides. The data pertains to cultivators farming their own land or leased land, and to agricultural labourers working for wages. Telangana reported 1,358 suicides of cultivators and 42 suicides of labourers. The data indicate the number of families left without their breadwinner.

Towards prevention of suicides

The Centre for Sustainable Agriculture (CSA) is a non-profit organisation working among farmers since 2004. While trying to understand the root causes of farmers' suicides, the CSA contemplated the idea of a helpline to support farmers in distress. The team met Divya Devarajan, the collector, about ex gratia payments that the government pays to families of farmers who had committed suicide (generally referred to as suicide families). Both parties decided to work together on preventing suicides. "Farm distress is not a new phenomenon," says Divya

Devarajan, presently the collector at the Adilabad district of Telangana and in charge of the district's administration. She remembers the distress her grandfather went through when she was young. She has memories of him losing most of his lands, when he was unable to repay loans taken from private money lenders who charged exorbitant interest rates.

She recalls her earlier stint as sub-collector, when one of her duties was to head a three-person committee, visit families of farmers who had committed suicide, verify the cause of suicide and sanction relief. "It was painful visiting the families. What is the use of helping them after the suicide? Why not prevent it in the first place? We thought the farmer might not have been driven to taking his life just because of loan sharks. But then we realised that his inability to repay loans might concern a bank that sanctions loans, the revenue department handling land documents, the agriculture department that provides seeds and so on. So we thought of creating a multi-stakeholder helpline," she says.

In the districts of Telangana, the collector and administrative officials hold a weekly meeting called *Prajavani* (meaning people's voice), with the citizens, to alleviate their problems. "This helps farmers bring their issues to the administration's notice. But some places are remote and thus they lack access. Moreover, the officials are bogged down by various responsibilities. There was a need for a dedicated centre to help farmers in distress, and coordinate with government departments to resolve their issues," says Sreeharsha.

"Often, the distressed farmer just wants to talk. When he talks to someone and that moment of anguish passes, he realises the possible consequences if he had carried on with his plan," says Divya Devarajan. To counsel farmers in their moment of anguish, *Kisan Mitra* was launched in April 2017 in the district of Vikarabad, situated in Telangana. Pamphlets, advertisements on local cable television and paintings on the walls of block offices helped create awareness about the helpline. Divya Devarajan tells villagers about the helpline and talks about it at every meeting.

When the call comes

The *Kisan Mitra* team comprises programme coordinator Sreeharsha, five counsellors, besides three district coordinators (one for each district), 14 field coordinators (five field coordinators each in two districts and four in one

district) and a psychologist. The helpline is in service from their office in Secunderabad from 8 a.m. to 8 p.m. throughout the year.

Farmers contacting the helpline often break down during the call, mentioning their crop loss and debts, and contemplating suicide. The counsellor calms them down. "Initially I talk to the farmer like a friend. Slowly, I tell him that suicide will not solve any of his problems and how best to use available resources. We make him understand that we will help him through his problem," says Vandana, a coordinator of one of the districts. When the farmer feels better, the counsellor collects all pertinent information that helps sort out his problems.

Immediately after an incoming call, the counsellor informs the responsible field coordinator. The field coordinators comprise men and women and cover three administrative blocks enabling the helpline team to take care of the entire district. "We visit the distressed farmer as soon as possible, within a maximum of four hours," says field coordinator Sangameswar J.

Collaborative work

Kisan Mitra goes beyond counselling distressed farmers and tries to mitigate their problems. The field coordinators' visits help the team in further counselling and gathering additional information. The team shares a summary of the information with the government officials. In turn, the officials regularly update the team on the action they take in each case. The team continues to coordinate between the government officials and farmers until the problem is resolved. "The collector reviews the cases in the *Prajavani* meetings. So it is a combination of a top-down and a bottom-up approach," says Sreeharsha.

According to Divya Devarajan, the follow-up of the cases conducted by *Kisan Mitra* helps her keep tabs on the issues on the ground. "The team and the officials bring important issues to my notice. For example, when we hear a lot of farmers complain about a pink bollworm (*Pectinophora gossypiella*) attack on their cotton crop, we know there's a problem that we need to attend to," she says. "We are able to identify problems at the right time and solve them immediately." Some farmers call the helpline saying that they did not receive their crop loan or crop insurance or any of the other government entitlements, not knowing the procedural formalities. The team help them navigate the documentation involved so that the farmers get their entitlements.

Support for distress and suicide families

The team bring the distress calls to a logical end. As for Mallappa, he did not have the land document, as the land was in his late father's name. He had inherited his father's debts. The land was hypothecated for a loan, and hence the land documents were in the bank. Added to these were his personal woes – one daughter is physically and the other mentally challenged. *Kisan Mitra* coordinated with the bank regarding the overdue loan, with the revenue department about the land, and with the horticulture department about the irrigation. As a result, his land succession documentation was completed within a day. His drip irrigation system was sanctioned, and he was able to save his sugarcane crop. He has nearly repaid his loan. One of his daughters is now getting educated.

At times the team seek the help of private donors for financial support. Worried about the situation of Boppu Padma's family, a neighbour called the helpline. Thirty-eight-year-old Padma had spent Rs 1,000,000 over seven years for treatment of her throat cancer. Her husband losing cotton and paddy crops to pest attacks, taking care of a late relative's children, looking after her mentally ill mother and her son after he had met with an accident wore Padma out. She requested *Kisan Mitra* to get her pension. Since she was not eligible under any government scheme, the team arranged for a monthly support of Rs 3,000 through a philanthropic individual.

Via the helpline, children of suicide families get enrolled in a government day or residential school. "A few are enrolled in private schools. When our field coordinators appraised the school administration of the children's situation, they waived off the fee," explains Vandana C., coordinator for the Mancherial district.

As for suicide families, the government gives an ex gratia payment of Rs 600,000. The team coordinates with the families on livelihood support, as often the ex gratia amount is used to clear debts. "Between 2014 and 2018, we helped more than 100 widowed women, providing them with milch animals, tailoring units, small provision stores and the like, for financial sustenance," says Divya Devarajan.

According to Sreeharsha, many try to commit suicide but are saved in time. "In Adilabad, we observed that for every five people who attempt, one dies. They may not have called us. But we try to address their issues as well," he says.



A district collector assisted by government officials of various departments reviews the cases of distressed farmers and suicide families.

Photo: Kisan Mitra

Ripple effect

When Adilabad was flooded in 2018, farmers lost their crops, and their houses got damaged. The agriculture department officials visited the fields, assessed the damages and collected data of about 30,000 affected farmers. With the relief payment slow in coming, despite efforts by the district collectorate, a group of farmers filed a Public Interest Litigation. “This move helped the affected farmers get a total relief of Rs 120 million,” says Sreeharsha. The move also helped other flood-affected districts to get compensation immediately. Of the 33 districts of Telangana, *Kisan Mitra* works in three at present. Nalgonda district is in the pipeline. Often farmers from other districts also call the helpline. “Though we can’t follow up on their cases, we counsel the farmers or give them information regarding government schemes, and wherever possible, connect them with local non-profit organisations working in the sector,” says Vandana.

Bringing the helpline to more districts

The helpline for the Mancherial district was started in March 2018. Karnan R.V., the collector in the district at the time of the launch, says that a couple of suicides among farmers spurred him towards establishing a helpline. “Often it’s not farm distress alone. Other personal issues add to their agricultural woes,

pushing them to take the extreme step. At that moment of despair, if he is able to vent out his feelings, the farmer will feel better. So we thought of a helpline for distress calls,” he says. Besides, he saw the success of the helpline in his neighbouring district administered by Divya Devarajan, who often encourages fellow bureaucrats to adopt the approach, and decided to launch the scheme in Mancherial.

According to Vandana, the death of a farming couple was one of the reasons that prompted the start of the helpline in the Mancherial district. Having been duped with spurious seeds, 35-year-old Kondakarla Tirupati suffered loss of successive drumstick crops. There was hardly any yield from his tomato, ridge gourd and other vegetable crops. With continuous crop failures over many seasons, he had accumulated a debt of Rs 1,500,000. He sold teak crops in an acre and cleared Rs 600,000. Despite taking a loan of Rs 400,000 from his parents, he was unable to clear his debts. When he met the district collector for help, he was sanctioned loan through the Telangana Scheduled Castes Co-op Development Corporation, as he belonged to the scheduled caste category. The government has separate corporations working for the welfare of most backward castes, scheduled tribes, etc. But tail-end impediments in the release of the loan proved to be the final straw for Tirupati. Having given poison to his family, he then hanged himself. While he and his wife died, the children aged twelve and fourteen survived.

Moving forward

Agricultural expert Devinder Sharma finds *Kisan Mitra*’s providing the farmer with mental support at the appropriate time very crucial. “Often bureaucrats know what industries want but are unaware of grassroots’ needs. So, *Kisan Mitra* having a dialogue with the collectors once a month would help them understand the constraints and make the system more effective,” he says. Sreeharsha sees the collaborative work involving the government as a good model. “Once, during a field visit, a government agricultural officer caught sight of a farmer sitting with a bottle of pesticide in his hands and alerted us. We were able to intervene and sort out the farmer’s problem within five days. So we find working with the government better than working as a parallel entity,” he maintains.

“I can’t say we have stopped suicides altogether. But I can safely say that we have been able to stop many farmers from taking the extreme step and more importantly we reach out to survivors,” Divya Devarajan states. She facilitates the interventions through a collector’s discretionary fund and opines that they could reach out to farmers in more places if the government institutionalised the programme.

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Our Village – creating endogenous growth

Migration from Africa to Europe is unlikely to slow down, unless major driving forces are taken into account. Our authors address insufficient economic growth in rural Africa as a primary cause and introduce an innovative concept to stimulate endogenous growth in targeted communities. Developed in cooperation with interested traditional authorities in rural Cameroon, the concept combines cultural, social and economic aspects.

By Günter Nooke and Sarah Zeller

Insufficient economic growth in countries of origin is considered as one of the primary causes of migration from Africa to Europe. Even though it has been addressed with much effort for seven decades, especially rural areas in many African countries lag behind growth expectations, resulting in rural to urban and international migration. Instead of focusing solely on economic elements, we propose a concept which combines cultural, social and economic aspects. We focus on four core challenges:

- Rural areas are subject to seasonal fluctuations, with limited liquidity during some seasons.
- Rural areas generally lack funds since central government allocates little and local authorities lack communal income.
- Community driven development (CDD) committees undermine traditional authorities.
- Lack of transparency enables elite capture of funds and decreases trust in government.

We propose a solution with four components to address these challenges at community level. Bringing together traditional structures and cutting-edge technology, it promises to reduce poverty and strengthen social capital, and may be scaled up to a world-wide level.

A community currency to create additional liquidity

In rural areas, especially in sub-Saharan Africa, income fluctuates seasonally. A majority of the population are employed in the agricultural sector, earning their income once a year during the harvest season. This causes a seasonally high liquidity which decreases as income is used to buy external supplies (e.g. fertilisers) during the following seasons. As liquidity declines, a seasonal lack of liquidity accrues. However, there is no decline in the supply or demand of goods and services. This leads to an imperfect allocation where excess



M-Pesa payment in Kenya by mobile phone. Community currency payment based on blockchain technology ensures transparency.

Photo: Jörg Böthling

supply cannot meet excess demand because of insufficient liquidity.

Conventional means for extra liquidity are, however, either not available or inefficient. The poor rural population in need of credits does not have enough access, while micro-credit institutions draw on cash reserves and only facilitate a re-distribution of existing resources. A community currency, on the other hand, provides a constant means of additional liquidity. Restricted to a geographical area, it does not become scarce and can act as a loan without interest, transferrable to any other member accepting the community currency. While usually not convertible, it can complement another currency.

A community currency appears to have the most impact when addressing an actual need for additional liquidity. In the Global North, few people use currencies such as the Chiemgauer (Germany) which replace official currency without evidence of a significant economic impact. In the Global South, however, currencies create an emergency market when official currency fails to meet citizens' needs. Argentine Red de Trueque improved the economic situation for almost half its community members, while Kenyan Bangla-Pesa

accounted for 22 per cent of the networks' daily commercial interactions within a week of its introduction.

In the long term, the usage of a community currency increases when income is low and decreases when it is sufficiently high to cover members' needs. The counter-cyclical effect lowers sales volatility and provides a more predictable income. Members may also cover production costs and daily needs within the network. The resulting savings increase members' liquidity in conventional money. The community currency thus favours B2B transactions promoting commercial interactions within the network. However, if supply significantly exceeds demand or vice versa, the network stops functioning efficiently. Ensuring this equilibrium within the network, a community currency potentially leads to a virtuous cycle of increased income, consumption and production.

A community fund to increase local funds

Domestic resource mobilisation (DRM) is key to local development. Unlike Official Development Assistance (ODA), it correlates

significantly with a country's economic growth and creates a social contract between citizens and government. Spending DRM in the same region in which it was acquired appears to be sensible, since trust in institutions and their effectiveness in providing public goods and services is low. This measure can boost a feeling of accountability to local populations and promote the population's scrutiny of expenditure.

In rural Cameroon, central government fails to supply adequate access to vital public goods and services; in the most recent Human Development Index, Cameroon ranked 153rd out of 188 countries. Government spending on rural development is low and does not show significant results. A community fund – to which members of a community currency contribute – can improve the supply of public goods and services at local level. Governed by locals accountable to the members, the fund can realise measures and projects benefiting the community.

Since management knows the community's needs intimately and is obliged to use the fund exclusively to address these needs, measures can be tailored to actual local needs. This increases the population's feeling of ownership. As funded projects are implemented within the contributing community, results are directly visible. Consequently, contribution and personal profit are more readily connected and the advantages of contributing more evident. Aversion to taxes may be decreased and government may also benefit from efforts to increase DRM.

Cooperation with traditional authorities to boost effectiveness

Giving control over funds to a managing group frequently enables it to misappropriate these funds ("elite capture"). In the development cooperation context, one approach to avoid this phenomenon is to externally authorise a committee (Community Development Association, CDA) instead of local authorities to assume a management role. The newly-founded CDA has little legitimacy and is usually not accountable to central government; neither is it monitored by the local population. Traditional authorities, on the other hand, have the long-standing legitimacy to impose new measures, even if these are only beneficial in the long run. However, they do not have the necessary funds to implement development measures. This discrepancy between two different sorts of authority may lead to social unrest.

Involving local authorities from the onset of the project ensures a strong advocate. Using existing structures which have grown over time and gained legitimacy within the community also reduces organisational efforts and ensures local knowledge and legitimacy from the start. Considering the risk of elite capture, managers and local authorities nevertheless need to be closely monitored and directly accountable to contributors.

Using blockchain technology to increase transparency

Corruption and a lack of transparency are major concerns in Cameroon. Anti-corruption laws are insufficiently implemented, impeding the government's ability to provide basic public goods and services needed for further economic development. On a macro level, corruption negatively correlates with economic growth. At local level, elite capture is facilitated through a lack of transparency and decreases trust in institutions.

Blockchain technology provides a framework to tackle corruption and increase transparency. Recording transactions in a decentralised manner, this technology ensures transparency on every performed transaction. Since transactions are verified by every member before they are saved, records cannot be changed afterwards, providing a tamper-proof data base. Blockchain technology may also increase trust within the network as members see that others are observing the rules. Adding to social pressure within the dense network of a village business community, corruption becomes unlikely as any member abusing the system can be held directly accountable. However, with widespread corruption, a number of people profit from the current lack of transparency. Major profiteers inside the community may therefore oppose the introduction of a transparent currency vigorously.

The implemented, blockchain-based community currency needs to be easy to use, without knowledge of numbers or reading skills, since part of the adult population in Cameroon is illiterate. An Unstructured Supplementary Service Data (USSD) code-based implementation ensures that non-smart phone users can participate. Using combinations of numbers, asterisks and hashtags (e.g. *101#), conventional phones can be used to navigate through a USSD-based menu and authorise payments. This technology is already widespread as it is used to re-charge phones or transfer money with systems such as M-Pesa in Kenya.

Unlike a paper-based currency, designing and printing tailored bills is not necessary with blockchain technology, eradicating significant up-front costs. Scientific monitoring, which is indispensable for assessment of the currency's impact, is facilitated by complete disclosure of all transactions; data security can be ensured with anonymisation of transactions. Scaling the project up and replicating it in other communities is viable and fast since the required technology already exists. In the long term, trading between communities can be facilitated as conversion between different community currencies and is easily implemented. The potential use in hundreds of thousands of villages can create a commercial business or banking model for the upcoming platform economy.

Bringing together traditional structures and cutting-edge technology

Within this framework, social and economic factors of a traditional village are combined under a traditional authority to stimulate endogenous growth and social cohesion. The concept has been positively evaluated by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in cooperation with traditional authorities of five communities in rural Cameroon. A pilot project is expected to be implemented soon and will be closely monitored, especially on a scientific level. If successful, scaling up the concept within Cameroon and to other interested countries and communities is a viable possibility.

While the project is implemented at the most basic level of a society, a community, it carries all aspects of development cooperation – economic, social and cultural ones. With its high potential for upscaling, our project can promote and mediate social transformation in Africa's rural areas and on a world-wide scale. The concept could create fundamental cornerstones and learnings for the new platform economy in presenting development solution for village or special communities interested.

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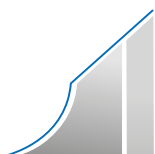
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