



Catalysing Innovation in Agriculture

CONVERSATIONS OF CHANGE



Publications in this series

CDAIS manuals and guidelines

- *Capacity Needs Assessments – A trainers' manual (2nd edition)*
- *Innovation Niche Partnerships – A guide to the coaching process*
- *Organisational Strengthening – A guide to the coaching process*
- *Organising a Marketplace – A practical guide*
- *Organising a Policy Dialogue – A practical guide*
- *Monitoring, Evaluation and Learning – Concepts, principles and tools*

CDAIS stories and conversations

- *Building Competence and Confidence in Agricultural Innovation – Stories of Change*
- *Catalysing Innovation in Agriculture – Conversations of Change*

The manuals are intended as working documents. The project supported the development of the Common Framework on Capacity Development for Agricultural Innovation Systems of the Tropical Agriculture Platform, and tested it in eight pilot countries. One key finding was that the framework requires adaptation in each country situation, and as such the manuals are intended as general guides only.

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Published by
Agrinatura, and the Food and Agriculture Organization of the United Nations

Paris, 2019

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Citation

Agrinatura and FAO. 2019. *Catalysing Innovation in Agriculture – Conversations of Change*. Agrinatura, Paris, and FAO, Rome. 72 pp.

ISBN: 978-2-35709-007-1 (Agrinatura)

ISBN: 978-92-5-131543-9 (FAO)

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INTRODUCTION

The experiences shared in this book of Conversations of Change capture the outcomes of three years' work conducted by the eight CDAIS country teams from Angola, Bangladesh, Burkina Faso, Ethiopia, Guatemala, Honduras, Laos and Rwanda. Collected between January and March 2019, they provide insights and perspectives of different actors engaged in the different capacity strengthening processes, within individuals and innovation niche partnerships, and at organisational and national level. These conversation stories highlight the complementary and cumulative benefits from combining work in all levels concurrently, and present a picture of the increased impacts from an integrated approach to strengthening capacities to innovate in agriculture.

What is CDAIS?

In 2015, organisations from eight countries, along with many global partners, were given the challenging task of putting into practice a new concept. Improving rural livelihoods through agricultural innovation had seemed easy. Many technologies have been introduced over the years, new seed varieties, micro-finance, and much more. But progress is still limited. Why? One thought was that farmers and those who work with them still lack the 'functional capacities', or what some call 'soft skills', needed for change to happen, like the ability to link with others, negotiate, and engage in political processes. This conclusion was confirmed at a 2011 meeting of ministers of agriculture from the G20 countries, who decided to establish the Tropical Agriculture Platform to address this. Agrinatura, a consortium of European universities and research institutes, and the European Union, responded to the call for support with the Capacity Development for Agricultural Innovations Systems (CDAIS) project, managed by Agrinatura and the Food and Agriculture Organization of the United Nations. And through this, a global taskforce was mobilized to draw up a methodology, called the 'common framework' on capacity development for agricultural innovation systems and which the CDAIS project tested.

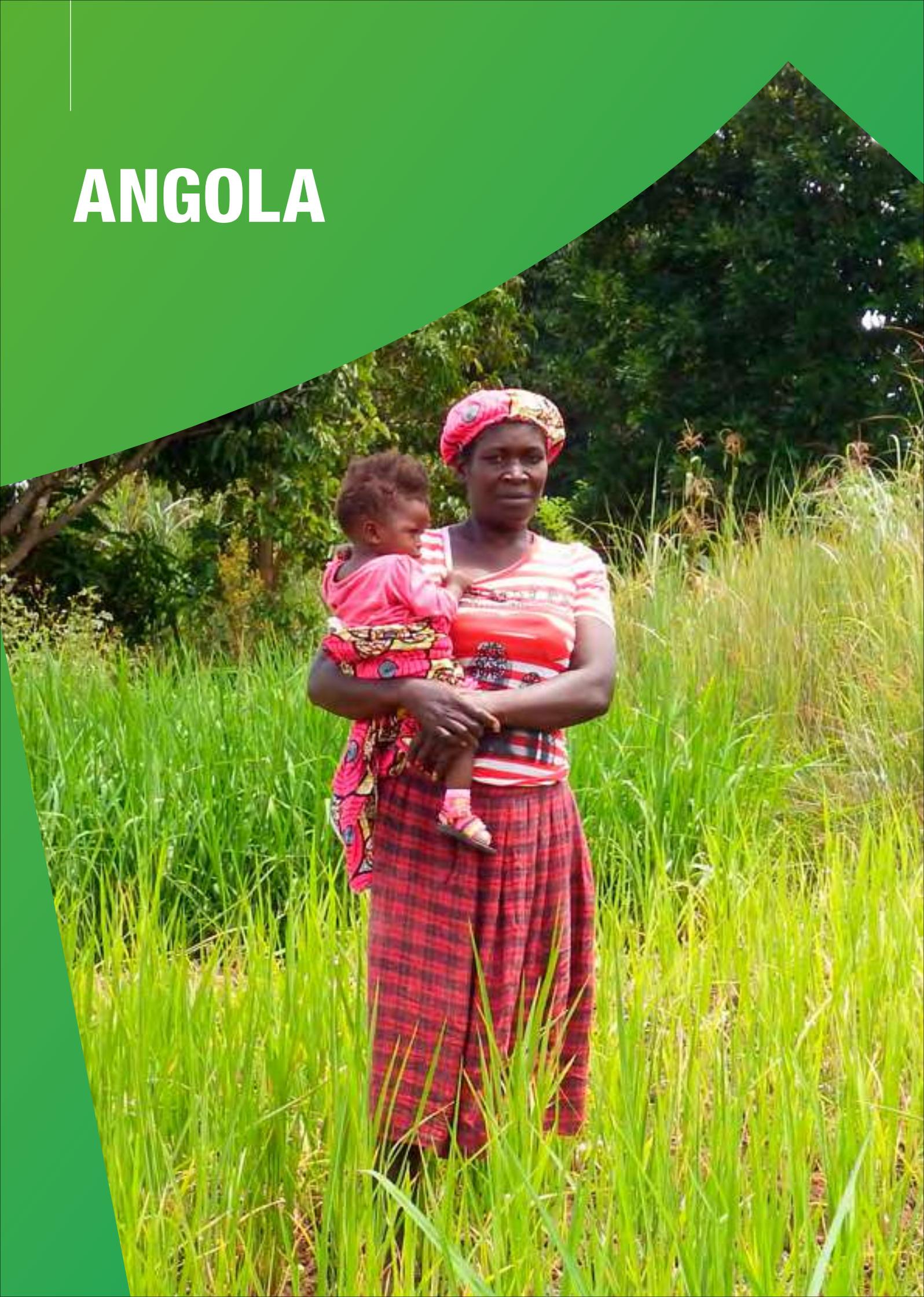
This builds on an earlier collection of Stories of Change from 2018 that showcased three different innovation partnerships in each country, and introduced different CDAIS approaches. But both the Conversations and Stories follow a similar approach. They focus on personal testimonies, and through them we read the words from the voices of the people involved. Real people, real experiences, real feelings. And changes have occurred, mindsets and attitudes have shifted – behavioural change – of that there is no doubt.

But this is only part of the 'story'. CDAIS was a pilot project, and was primarily intended to test a set of approaches for capacity development to improve innovation in agriculture (see box). Or in other words, to improve the ability and capability of 'actors' involved in such systems to make new things happen in complex and unpredictable situations. From the processes tested, a series of six manuals and guidelines have been produced to help future implementation of similar initiatives. And the systematic collection of detailed data will yield solid scientific data that compares and contrasts approaches and results from the different countries, to further guide donors and practitioners alike.

The ultimate aim of CDAIS was to find the best ways to improve agricultural innovation systems by strengthening the functional capacities of those involved in them, that took place through the facilitation of interactions between diverse stakeholders, identifying a common vision, problems to be overcome and how to do this, supported by training, and reflection and learning events. This occurred on partnership and national levels of intervention, looking at the three dimensions - individual, organisation and nation 'system' level. And the CDAIS approach appealed because it opened spaces for interaction, supporting individuals and organisations to work better together to achieve their common goals.

Through these Conversations, such experiences are shared, and the CDAIS team hope that they encourage and inspire others to be part of similar change processes.

ANGOLA



There was a need for change in agricultural development in Angola, and CDAIS has been appreciated. Results show positive outcomes in a number of areas, including the acceptance of the benefits of strengthening functional capacities across different levels. And, although it is still too early to see the full benefits of the approach, many involved said they would continue to apply it in their other activities. This story begins with views and experiences from rice growers and their partners, as an example of one of the three innovation niche partnerships in Angola. Here, impacts from applying the CDAIS methodology are evident. We then hear from targeted organisations that provide innovation support services to family farmers, on how CDAIS has strengthened links between them and farmer cooperatives, and with national-level discussions, culminating in news of the first national seed policy dialogue in March 2019, and lessons learnt.

Farm-level changes

“We started in 2015 with 48 members, and now we are 84 in a registered association”, said Marcos Satuala, President of the Arroz do Sucesso rice-growers cooperative. “But we could not have achieved any of our successes if it was not for CDAIS. We have benefited from many training courses, like on how to better manage our co-op, negotiation skills, how to better market our rice. And, through CDAIS, we linked up with trainers from other organisations like [the NGO] ADRA [Acção para o Desenvolvimento Rural e Ambiente, ‘action for rural and environmental development’], and learnt technical skills from JICA [Japan International Cooperation Agency] and IIA [Instituto de Investigação Agronómica, the national agricultural research institute].”



“We started to plant on our own land because it earns us more money than we get from growing maize”, said Ernesto Tito Cachengola and his wife Josefina.

The leader of the rice partnership is Vuvu Kua Nzambi, a researcher working for IIA. “I knew where [the farmers] had come from, how they started”, he said. “At the beginning they were just a few farmers with a few ideas – and lots of headaches. Rice had never been grown in this area and they wanted to try.” The rice partnership was selected as one of the three innovation niche partnerships in Angola, and CDAIS became involved. Nzambi added, “but through diverse lessons they learnt to work more closely together, and once they had changed their attitudes and saw the advantages of helping each other, progress became much more rapid.”

This partnership has also benefited from being part of the farmer field schools programme of the regional agricultural extension services (Estação de Desenvolvimento Agrário, EDA) of the national institute of agricultural development (Instituto de Desenvolvimento Agrário, IDA). At first, they had a small amount of land associated with the school, but this was later expanded as interest and membership grew. Members come and work each Wednesday, and have training at key points in the growing cycle. Since 2017, farmers have also started to grow rice on their own land, with the area on which rice is grown expanding to 4.5 hectares, with total production exceeding 1.5 tonnes.

Cooperative registration, a major leap forward

The biggest turning point mentioned by all partners was the registering of the cooperative. “And on the day of registration you should have seen the faces of the president and other cooperative members”, said Nzambi. “They were so happy, and became super-motivated, full of hope and confidence. Before, for example, they had no courage to dig an irrigation ditch though they knew how to it. But afterwards, they built it, and did much more!”

CDAIS National Innovation Facilitator Juliana Sacamia explained the process: “First, we had a meeting to explain what was needed, why each of the ten different documents was necessary, and they chose a name for the co-op. We then completed the forms and went together with ten co-op members who each had to sign them all in four different departments. It was quite a challenge, but we got there in the end, and in October 2018 registration was approved and Arroz do Sucesso was born.”



Members of the rice-growers cooperative discuss issues with partners of the innovation niche partnership. Here, Marcos Satuala, group president (left), asks Vuvu Kua Nzambi (centre), a researcher at the national agricultural research institute (Instituto de Investigação Agronómica, IIA), about pests and diseases.

“Before we had to buy rice, but thanks to learning new skills, we grow our own and have now started selling the surplus. So next year we will all plant more!”

José Luis Betatela rice farmer, Alimuat, Bailundo

“We could still grow more though, as there is land by the lake that would be perfect for rice but we would need ploughs to prepare it”, said farmer Manuel João Cupanga. “Don’t worry”, replied Joachim Pinto Afonso, Head of the Bailundo station of EDA, “now you are registered, you can become a part of the new MOSAP II project [Projecto de Desenvolvimento da Agricultura Familiar e Comercialização, ‘family agriculture development and marketing’] that is about to start, and I will help you.” MOSAP II is a major World Bank-supported programme to support agricultural development in Angola. “With this you can receive credit for buying tools, seeds and fertilizers, through *caixas comunitárias* (community accounts)”, explained Afonso. “And they will help with equipment, animals

or machines for land preparation.” What is clear is that CDAIS has helped to build the partnership to a point where it can expand with existing partners, sustainably and irreversibly.

Organisational changes

Vitorino Chonguela, Head of the Huambo provincial office of IDA was clear: “IDA works for the development of family farming, and this project promotes innovation together with farmers and other organisations, to advance jointly.

But this is not a simple process, and requires many different partners and functional capacities. For example, IDA can supply any amount of seed, but it needs to help communities to produce themselves, and this is where CDAIS came in, helping us and others to improve our capacities in a novel way.”

The CDAIS approach includes working with innovation support service providers to identify capacity gaps, develop a vision and set priority objectives. In Angola, the process got this far, with communication skills identified as the



“There is no way could we could have registered our co-op without the help of CDAIS.”

Marcos Satuala President of the Arroz do Sucesso rice-growers' cooperative

“CDAIS approaches are essential and all organisations would benefit from applying this methodology”, Imaculada Henriques Matias (right), Director of the agricultural sciences faculty (Faculdade de Ciências Agrárias, FCA) told Madalena Teles, Agrinatura Focal Person for Angola. “CDAIS helped us to identify our problems, and what we can do to resolve them. It has also strengthened our links with co-ops – that is very important.”

Innovation partnerships in Angola



Seed production

Facilitators: Zeferino Konda, Oliveira Paulo

Lack of quality seed is a major constraint to agricultural production in Angola that is acknowledged at the national level. The aim of this partnership was to increase the commercialisation of high-quality seeds produced by 200 smallholder farmers, members of the Cooperative Sementes do Planalto in Huambo and Bié provinces. The cooperative was established with technical support from the NGO CODESPA, which continues to work with them, with seed quality assurance and certification provided by the national seed service (Serviço Nacional de Sementes, SENSE) central laboratory. Through CDAIS, the cooperative has expanded its network of partners, now including the agricultural research institute (IIA) and the agricultural sciences faculty (Faculdade de Ciências Agrárias, FCA), amongst others. And some of their issues have been taken to the highest level.

“Before, farmers had no idea who we were at IIA [the agricultural research institute] or thought we did nothing useful. But thanks to CDAIS, all this has changed, and now they know the services that we provide.”

Vuvu Kua Nzambi IIA researcher

priority by all three organisations involved. While training programmes have yet to begin, some of the approaches are already being scaled out independently by individuals within the organisations.

“The problem is not just an issue of finance, but of how to work together”, said Oscar Morais, Programme Leader at IIA. “Then CDAIS came to strengthen institutional structures and has linked us with others by helping us to develop personal connections, so we got to know each



Rice development

Facilitators: Juliana Sacamia, Oliveira Paulo

The aim was to build the functional and technical capacities of rice growers in Huambo and Bié provinces. Improved cold-tolerant and disease-resistant varieties were introduced along with technical agronomic packages. The area under cultivation has expanded, yields have increased and markets have grown, especially since they obtained the use of a mechanical thresher in 2018. But the greatest achievement was the formal registration of their group as a legal association – Arroz do Successo. The national extension and research services (EDA and IIA) will continue to work with the partnership, and the registration opens many other options for long-term support.



Rural entrepreneurship

Facilitator: Dibanzilua Nginamau

The main goal of this partnership is to provide business opportunities to new agricultural entrepreneurs in Kwanza Sul, to be achieved through continuous training and promotion of large-scale production of grasses and legumes. Partners include farmers in the Terra do Futuro project, and the Angolan Development Bank (BDA). Farmers identified their key needs – mostly business planning, proposal writing, accounting and bookkeeping – and several training courses were delivered. However, the agricultural project itself then began to face increasing financial difficulties in 2018 (outside of CDAIS control), and many farmers abandoned their land, so limiting any further capacity-strengthening activities.

other ... CDAIS made us conscious of the need to work in partnerships, and for better communications. This will have long-term impacts, and though we don't see visible impacts yet, this is a process that will continue.”

Afonso added that CDAIS was different in its focus on capacity strengthening and the support given to building partnerships. “And the stories from the rice partnership give an excellent example of what can be achieved”, he said. “Seeing this, I now use CDAIS approaches in other

aspects of my extension work, with positive impacts on how I relate to other cooperatives.” And Nzambi from IIA added, “I shared what I learnt through CDAIS with colleagues at IIA, and some have changed. Before we always worked through EDA as a ‘bridge’, but as I now work with farmers directly, others are following my lead.”

Antonino Kamutali from the agronomic sciences faculty (FCA) noted that CDAIS had helped to bring FCA and IIA closer together: “Before there would sometimes be overlap in activities, though we are on the same campus. But through CDAIS we saw what the other was doing, and this also strengthened personal links, and therefore institutional links.”



“This has given us so much more knowledge on how to grow rice”, said Rosa Salomão, group member.

Making the links between levels

“A problem in Angola is the lack of bridging institutes, especially between farmers and the national extension services, and between farmers and researchers, but CDAIS has really improved these connections”, explained José Maria Katiavala of ADRA. “Or put another way, there is a gap between those who produce knowledge and those who produce food, which CDAIS has helped to fill.”

Juan Molina, CODESPA Angola Country Director and a key partner in the seed partnership, also shared his positive views: “By strengthening organisation linkages, CDAIS provided something new, and that works. Inter-institutional arrangements are complicated in Angola, but here we see changes. In comparison to other projects CDAIS is different,

that was never done before here. Through CDAIS, existing relationships are strengthened and new ones are made. And the link to national level such as through the seed policy dialogue is a fundamental change.”

The ‘dual approach’ is one of the key concepts behind the CDAIS strategy. And the seed policy dialogue is a perfect example of how CDAIS used the methodology to make the right links, leading to real impact. “The dialogue began in 2018”, explained Maria de Fátima do Nascimento, CDAIS Country Project Manager. “It started with many discussions with our innovation partnerships and the partners who work with them. This led to the identification of three common challenges: access to credit, land tenure, and availability of quality seed. These were discussed at a regional policy dialogue in Huambo in September 2018, where a consensus was reached that others were already working on credit and land issues, but no one was tackling seeds. So we focused on this, leading to the first high-level policy dialogue on this topic as the next step.”

“CDAIS is a very, very positive initiative, and has helped a lot by providing a context through the policy dialogue at national level. This is a first.”

José Maria Katiavala Project Assessor, ADRA

The national policy dialogue on seeds

Building on the CDAIS policy dialogue process, a national-level meeting was held in March 2019, officiated by His Excellency the Minister of Agriculture and Forestry Marcos Nhunga, Secretary of State of the Ministry of Agriculture and Livestock José Carlos Bettencourt, and FAO Representative to Angola Gherda Barreto Cajina. In his opening remarks, Nhunga stated that, “the theme of the round-table is of utmost importance for the country’s agricultural development. It shows the willingness of different stakeholders to discuss this theme and formulate recommendations on strategic actions to support a national seed policy.”

“The policy dialogue process was extremely important to share our work and understand what other organisations are doing”, Pedro Moçambique, Director of the phytogenetic resource centre (Centro de Recursos Fitogenéticos, CRF) said afterwards. “Putting together so many different stakeholders is not usual, and these are the ones that lead the process.” And Augusto Caetano da Silva, Director of the national seed service (Serviço Nacional de Sementes, SENSE), added, “one of the main achievements of the

policy dialogue is that recommendations formulated through the process were well appreciated by the Minister and will be taken into consideration. Without CDAIS this process would probably have happened anyway, but not now and much more slowly.” In his closing remarks, Bettencourt challenged participants with these words: “For a long time we were facing the sea, and we forgot what was inside. We are all agronomists – let’s take the ox by the horns.”

“I have changed a lot”

CDAIS has made a clear difference for a number of individuals who were or still are involved in the project. Many said the same thing – variations on “I have changed a lot”. All were positive, and offered examples of changes within themselves, and new skills, knowledge and attitudes they have learnt and used in other aspects of their lives.

“My vision has changed completely. Through working with farmers and other partners, CDAIS has opened my mind, especially in how I relate to other people. Now I listen much more, and with patience, building compromise, and this has positively affected how I relate to my colleagues in my other work.”

Juliana Sacamia, National Innovation Facilitator, rice partnership

“From my involvement with CDAIS I have learnt a range of new skills, such as how to communicate in general and especially with farmers, and how to collect, process and analyse information from different experiences. With CDAIS I learnt that everybody and everything is important.”

Romão Cabeto, Monitoring, Evaluation and Learning Associate

“I work in agricultural innovation, but CDAIS taught me about new tools and how to apply them, and also how to use tools I already knew in new areas and in different ways. I also learnt about the importance of turning points, and reaching the moment of irreversibility in the change process.”

Oliveira Paulo, Lead National Innovation Facilitator

“This experience has led to great improvements in my public speaking, facilitating meetings, time management, report writing, but especially in my personal interactions. And what I have learnt I now use a lot in my other work, such as the importance of listening and collecting views from everyone. And there are also changes in my family life too, as with my younger siblings – instead of telling them to shut up, I now ask them to speak up!”

Zeferino Konda, National Innovation Facilitator, seeds partnership

“I learnt the importance of working with multiple partners and building partnerships to help solve problems together, and CDAIS gave me opportunities by creating openings to meet others. Before I just looked at what I wanted to, but then I saw that there is so much else to learn from the diversity of actors if only one takes time to talk and listen, especially, for example, about traditional knowledge from farmers. This has opened my mind, and led to a real outpouring of ideas.”

Vuvu Kua Nzambi, IIA researcher and leader of the rice partnership

“The initial NIF [National Innovation Facilitator] training and 18 months as a CDAIS facilitator taught me many things that I still use today. Working with farmer cooperatives and service providers for my MSc thesis, I use the CDAIS problem tree and other tools. And whereas before I was more forceful, now I find myself more open, interacting more, listening more, building relationships and trying to find consensus.”

Antonino Kamutali, former National Innovation Facilitator (2016–2017)

Key lessons learnt

“As a partner in all three of the innovation niche partnerships, I see that CDAIS has helped, but more still needs to be done”, explains Katiavala of ADRA. “They need more capacities to resolve more complex problems and, through better leadership, they need to change their attitudes to a more business-oriented approach, and must provide services to their members. The Ministry of Agriculture needs to get more involved, providing funds such as community accounts, where Angola lags behind compared to other African countries.”

Oliveira Paulo, Lead National Innovation Facilitator added some further observations: “ADRA had already given lots of training to the seed partnership, for example, but it never got to the point of irreversibility. But CDAIS got them to that point through a greater level of reflection. Similar things occurred with the rice partnership, when they reflected on what they really needed. And, through CDAIS, they visited a bank for the first time to open an account – another point of irreversibility.”

Henriques Matias of FCA made a different point: “CDAIS works on improving functional capacities but people still want and need more technical skills. There is a need to look at both in parallel to make the process sustainable. Some think they are technically competent but they are not, and there is no amount of functional capacity strengthening that will overcome this.” Katiavala of ADRA agreed: “CDAIS brings a lot of needed talk-talk, but at least at the start, some material needs also need to be met.”

And on a national level, the experiences were clear, as the FAO Representative in Angola Barreto explained: “We gained a lot of experiences from CDAIS, and will integrate some of the methodologies into other projects we are working on, and in the upcoming programme on innovation and small-scale industries. Seeds are such a major issue regarding food security for family farmers, and the policy dialogue that CDAIS has led has had a great and lasting impact, aiming at a national seed programme that FAO is ready to host.”

“For 30 years, projects have provided tools and seed, but farmers are still poor”, explained Paulo. “Now with CDAIS, we are trying a different way, of increasing other capacities to catalyse innovation in farming. This is much more likely to produce sustainable results, helping farmers to help themselves. This is our mission. Now this pilot phase is about

to end, but it has been very interesting to listen to farmers and learn with them. The next step is of course to analyse this over all the countries and come up with ways forward at a global level. But what seems clear is that if all development projects would invest just 5% of their funding in CDAIS approaches, everything would work so much better!”



The national seed policy dialogue brought together more than 50 delegates from government, research, extension, private sector including seed producers, farmer representatives, NGOs, donors, UN agencies and other development partners.

This story of results from the work of the CDAIS Angola country team is based on interviews with them, CDAIS National Innovation Facilitators and various other partners.

Maria de Fátima do Nascimento (FAO) – Country Project Manager; Armando Valente (IIA) – National Project Coordinator; Madalena Teles (Instituto Superior de Agronomia, ISA) – Agrinatura Focal Person; Oliveira Paulo (consultant) – Lead National Innovation Facilitator; Abdoulaye Saley Moussa – FAO HQ Technical Support; Interviews – Nick Pasiecznik (ICRA); Photographs – Nick Pasiecznik/CDAIS unless otherwise stated.

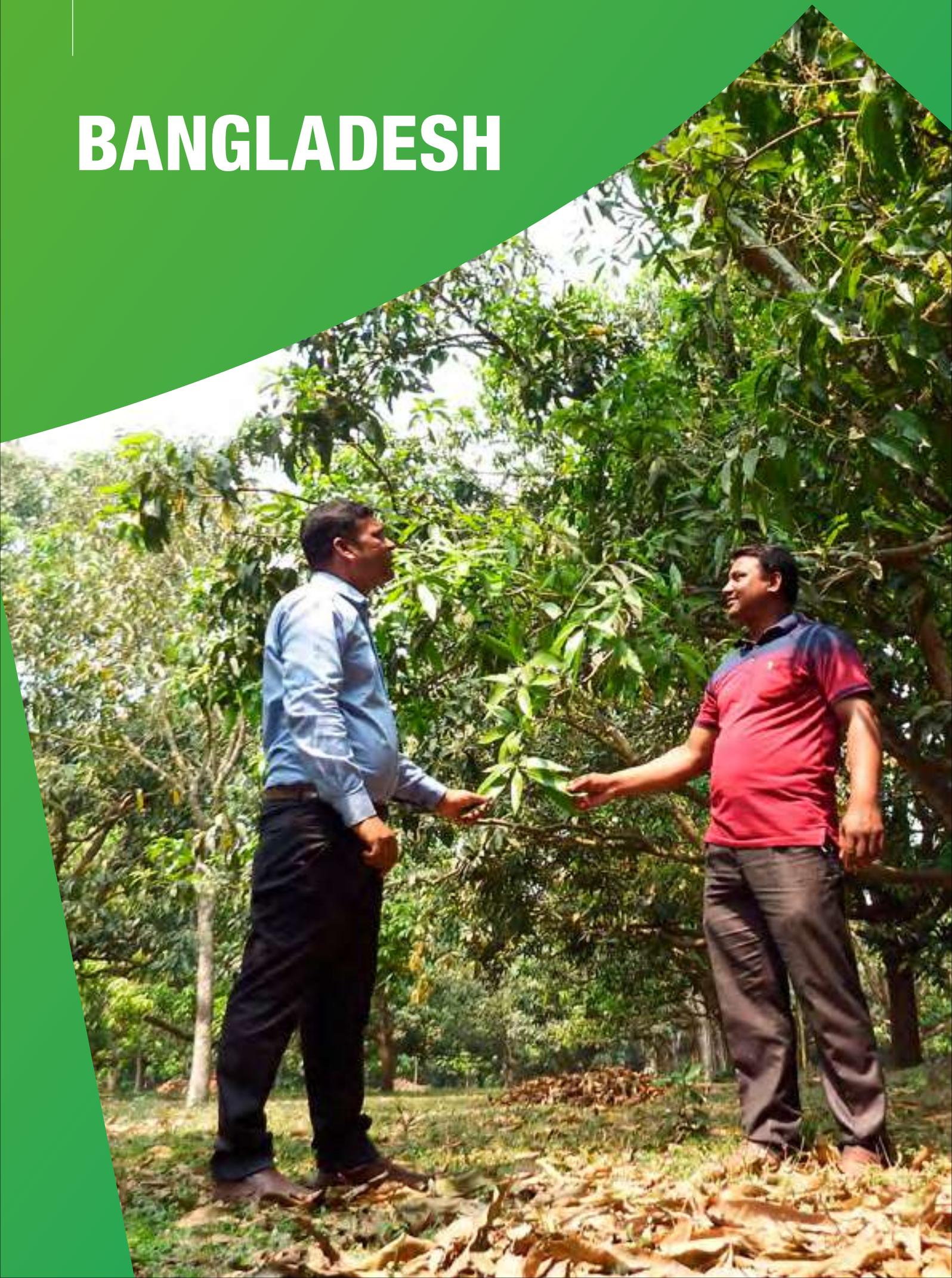
See also: Growing hope from a new crop (Sacamia, J., Cabeto, R. and Konda, Z.). pp 28–33, in: Agrinatura and FAO. 2018. *Building Competence and Confidence in Agricultural Innovation Systems. Stories of Change*. Agrinatura, Paris, and FAO, Rome. 196 pp.

CDAIS is implemented in Angola by Agrinatura (represented by the Instituto Superior de Agronomia, ISA, Portugal), FAO Angola, and the national Instituto de Investigação Agronómica (IIA), along with other partners in the different innovation niche partnerships.



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BANGLADESH



BANGLADESH

Agriculture provides the principle source of livelihood for more than 80% of its 170 million people, and is the backbone of the Bangladesh economy. The government acknowledges this in its strategy to 2041, with investment in research and extension. CDAIS began in 2015. At the outset, however, the need to also invest in strengthening functional capacities was not recognised by those used to the ‘traditional’ technology transfer model. The story of mango producers in Chapai Nawabganj district is offered here as an example, though CDAIS saw success with all three innovation niche partnerships (or ‘clusters’) it worked with. At organisational level, it is clear that the ‘new’ approach has gained some traction in key institutes involved in agricultural innovation, and that CDAIS tools and approaches have opened people’s eyes to a complementary form of long-term capacity development.

Changes in attitudes, and practices

“Before, we only thought of ourselves, but now we think as a group”, explained Md. Ismail Khan, mango farmer and Secretary of the Shibganj Mango Producers’ Cooperative Society Ltd. The President Md. Omar Ali continued: “With CDAIS, we came to understand the complexity of our situation. And together we identified our problems and those who could help us solve them. For example, we requested BAPA [Bangladesh Agro-Processors Association] to come and give us technical training, and explained to the DAE [Department of Agricultural Extension] the issues we had that were limiting export potential. The DAE officer came and vowed to support us in every way he could. We also asked the Deputy Commissioner to change the ‘maund weight’ for mangos that we considered unfair, and he did so! We would never have done these things without the confidence we gained from CDAIS.”

Chapai Nawabganj district is the centre of mango production in Bangladesh and, within the district, Shibganj upazila (sub-district) is the major producing area. “This upazila is the largest mango producing area in the country”, said the Upazila Agriculture Officer S.M. Aminuzzaman. “We have around 18,000 hectares of orchards and about 80% of our farmers grow mango, with some 95% of the working population involved in some way with the value chain.”



Md. Ismail Khan tying a bag to his mangoes.



CDAIS National Innovation Facilitator Md. Sorof Uddin (left) in the orchard of co-op member Md. Ibrahim Ajad, discussing prospects for the coming harvest.

But numerous organisational and functional capacity issues were limiting the possibilities for farmers to earn more, and as such it was selected as one of three CDAIS innovation niche partnerships in the country.

During the capacity needs assessment in 2017, the partnership identified the gaps – what skills needed strengthening – and training then focussed on these, as Rozana Wahab, Lead National Innovation Facilitator, explained: “We worked with the group on managing multi-stakeholder partnerships, and facilitated training from other organisations on group management,



The Shibganj Mango Producers' Cooperative Society Ltd. meet in one of their member's orchard with CDAIS facilitators and the local upazila (sub-district) agriculture officer to share current issues (in this case, irrigation) and future plans.

leadership and communication skills, networking, negotiation and gender awareness. These were then applied as we supported the partnership to develop a marketing strategy.”

“And in early 2018, the group decided that they wanted to form an association, but didn't know what type of organisation they wanted”, said National Innovation Facilitator Md. Sorof Uddin. “Six months later they had agreed what they wanted and we then supported the process. The road was long, but the Shibganj Mango Producers' Cooperative Society was formally registered on 24 March 2019. And, as Khan explained, “this would never have happened without CDAIS. The group would not even have consolidated, let alone become registered. This is a huge achievement for us.”

“Thanks to CDAIS, our thinking changed, from ‘me’ to ‘we’.”

Saif Uddin Ahmed farmer from Char Ghagra, Mymensingh

“CDAIS helped us in so many ways”, said Khan. “The marketplace was amazing for us, to meet with support service providers, and the policy dialogue where we shared our problems in accessing export markets at the highest level. But the most valuable was the exposure visit to Thailand.” CDAIS helped to organise a visit in March 2019 for four members of the cooperative, the CDAIS facilitator, the Upazila Agriculture Officer and a private sector representative, to mango producers, markets and related government services in two provinces in Thailand. Aminuzzaman elaborated: “We saw how they spray only two or three times a year where some farmers here spray more than ten times, how they harvest using special tools, how they process green mangoes, and how they use paper bags like Dr Sorof has helped to introduce here.”

Mango bagging is a real innovation in Bangladesh, promoted by the Bangladesh Agricultural Research Institute, as Sorof Uddin explained: “Tied around the growing mangoes 40 days after fruit set, they improve fruit quality with a 50% increase in sale price, and reduce the need for pesticides against fruit flies and anthracnose disease by 30–70%. I first tried this in 2008, but the bags were not resistant to our heavy rains. Then during a visit to China in 2010 I found a source of better bags that would last at least two seasons, and the practice spread as farmers saw the



Co-op members discuss progress of their new office building and packhouse, alongside one of the group's orchards.



Members of the Shibganj Mango Producers' Cooperative Society Ltd. in front of their banner, with Secretary Md. Ismail Khan proudly showing their formal certificate, seated next to President Md. Omar Ali.

benefits. In 2016, 3.2 million bags were sold nationwide, increasing to 27.5 million in 2017, and 80 million in 2018, of which 60 million were sold in Shibganj alone. I hope that in five years we will see half of all producers using this simple technology that enhances the economic, environmental and health benefits to farmers and consumers alike.”

The road forward for the co-op

“Being a registered cooperative gives us so many more opportunities”, said Ali. “We are now building an office and store, have leased five hectares to plant a new variety that fruits year-round, and are looking for donors and investors to help us expand into mango processing. We also aim to improve our marketing by branding with our cooperative logo, and to start exporting through links with Swiss Contact and Solidaridad.” Group member Md. Mostafizur Rahman added, “In the future, we also want more people to become involved, men and women, and to become an umbrella organisation including other unions. Together we can learn more and earn more, and hopefully expand to more than 100 members by next year.”

“The changes are so clear. At the beginning only five or six would turn up to meetings and no one would want to talk, but now only one or two will be missing and you can't stop them talking! They are so much more confident in sharing their thoughts and ideas.”

Mojammal Haque assistant National Innovation Facilitator

“And we especially thank Sorof Uddin [CDAIS facilitator], who has guided and supported us all along our journey, and is now also a good friend”, concluded Ali. What also surely helped is that as well as being a senior scientist who specialises in mango research, he is also a mango producer himself and comes from the same area.

Learning from CDAIS

Those involved in CDAIS activities in Bangladesh all stated how much they have learnt, with much being new to them, as confirmed in the evaluation of acquired skills in March 2019.

“The concepts and tools introduced in the facilitator training were like a breath of fresh air, and the capacity needs assessment gave me a chance to really hear the marketing challenges that our farmers face. The CDAIS approach also helped develop my own skills and confidence as a facilitator, which I will continue to use in other aspects of my work.”

Fatema ‘Shila’ Wadud, National Innovation Facilitator, Department of Agricultural Marketing

“The partnerships are such effective platforms for different groups of people to work together, and for ‘learning by doing’ using participatory tools. I was part of the learning process, but importantly, I got to understand what ‘innovation support systems’ are and how to develop the capacity of organisations to improve the services they offer. The functional skills I have learnt help me to facilitate meetings and workshops, and in my research work and project implementation.”

Salah Uddin Ibne Syed, National Innovation Facilitator (organisations), Bangladesh Academy of Rural Development (BARD)

“I have understood how soft skills can strengthen farmers’ capacities through training and workshops and working together, and how these acquired capacities will help them down the road. I will now use soft skills training and implement CDAIS approaches in other development projects I work on.”

Salahuddin Ahmed, Monitoring, Evaluation and Learning focal point, Ascend International

“Through CDAIS I have enhanced my own functional communication and sharing skills, and learnt how to facilitate meetings and engage with farmers and other stakeholders. These soft skills were acquired from my participation in different

activities such as coaching plan evaluations, and reflection and refinement workshops, and I gained extra experiences from the other two partnerships. These and other skills I now use in my personal and professional life.”

Parvez Chowdhury, National Innovation Facilitator, Bangladesh Fisheries Research Institute (BFRI)

“I have built my confidence and competence for fulfilling our goals using new tools like visioning, the problem tree, coaching plan, reflection, and progress markers for monitoring. Especially interesting were multi-stakeholder partnerships, participatory decision making and conflict resolution. And as a project leader in value chains, I have ample opportunities to use these new skills in other areas of my work.”

Md. Jamal Uddin, National Innovation Facilitator, Bangladesh Agricultural Research Institute (BARI)

“I have learnt many new ideas from CDAIS that I shared with others in my organisation [a national NGO]. And after discussing with senior management, I will use these new training methods to teach these new skills to more farmers.”

Medu Aong Marma, assistant National Innovation Facilitator, CCDB (local NGO)

“Through my involvement in the whole range of CDAIS activities, I have learnt new tools and methods, and had the opportunity to listen to many people, especially other service providers. I now appreciate the value of functional capacities, used these skills when helping farmers to form their producers’ cooperative, and am applying them in other aspects of my work.”

Md. Sorof Uddin, National Innovation Facilitator, Bangladesh Agricultural Research Institute (BARI)

“Learning about the value of working together in platforms and partnerships was very useful for me, and I will certainly use this approach when I work with farmers again.”

Mojammal Haque, assistant National Innovation Facilitator, CCDB (local NGO)

Strengthening capacities of service providers

Part of the CDAIS approach is to work with key innovation support service providers. All three partnerships identified marketing and processing as particular challenges, so the Department of Agricultural Marketing (DAM), Bangladesh Agro-Processors Association (BAPA) and the Bangladesh Agricultural Research Council (BARC) were invited to work with the CDAIS team to identify capacity gaps, develop a vision, and set priority objectives to become more effective and responsive service providers. Staff considered the status of their organisations related to their mandates and farmer expectations, analysed their capacities to organise and deliver, and developed action plans with a vision, priority objectives, actors of change and progress markers.

“Through this process we got to understand the weaknesses of our organisation, and though making changes is not easy, it is happening, little by little”, explained Baktear Hossain, National Project Coordinator and Principal Scientific Officer at BARC. “New ideas are being presented at our monthly meetings, and I see people thinking differently. For example, we are considering functional capacity training from next year [2020], and there is a plan to broaden the National Technology Transfer Coordination Committee that BARC leads. Until now this only concerns crop production, but we now see the added value from including fisheries and livestock, as well as agro-processors, farmer representatives and other actors. I also see changes in DAM and BAPA, who are now proposing farmer-friendly and market-focused activities to better integrate innovation into new and ongoing projects.”

Neena Shahnaz Begum, Deputy Director at DAM said, “through the CDAIS workshops we learnt our strengths and our weaknesses, and how to develop the services we offer through building capacity and new partnerships which we will now apply.” DAM Director General Mohammed Yousuf added, “and we need to improve organisational skills, of our farmers so they can get a fair price for their produce, and of our organisation. We are recruiting new staff; we will now ensure they benefit from soft skills training.”

Salah Uddin Ibne Syed, National Innovation Facilitator for organisational strengthening, added: “together they found new dimensions to cooperate, relate and organise,



Neena Shahnaz Begum and other staff from the Department of Agricultural Marketing developing the capacity to collaborate during an organisational training course in March 2019.

and I have seen how they have developed their functional skills, and a new culture of sharing and learning. I also see changes up to national level, with the Ministry of Local Government, Rural Development and Cooperatives introducing a new policy in November 2018 supporting agricultural production through cooperatives.”

Policy dialogues

To achieve sector transformation for agricultural innovation requires a shift in focus from reactive problem solving to engagement and dialogue, and CDAIS also focused on developing capacities at the grass roots to engage in strategic and political processes. District-level policy

dialogues were held between sector stakeholders and senior officials to sensitise the officials on policy issues that constrain innovation, leading to agreements on actions to address those that could be dealt with at the local level. Unresolved challenges were then presented to policy makers and public and private sector stakeholders for discussion at a national policy dialogue in September

2018. “At the last policy event I attended, I witnessed how farmers expressed themselves so clearly and confidently in front of policy and decision makers”, explained Manfred Fernholz of the EU Delegation to Bangladesh. “I was gladly impressed listening to their simple, genuine and convincing words and not prepared speeches. They are indeed empowered.”

Innovation partnerships in Bangladesh



Mango

Facilitators: Mohammad Sorof Uddin, Mojamal Haque (assistant)

Mango is an important cash crop in Chapai Nawabganj district, and Shibganj upazila (sub-district) contributes more than half of the output. However, producers there were frustrated by limited market opportunities. Following CDAIS training on organisational development, and on leadership and management skills, a group of mango growers had the confidence and competence to form the Shibganj Mango Producers' Cooperative Society Ltd, now regarded as a focal organisation consulted by the upazila administration. Members participated in the district policy dialogue and highlighted their concern over the higher unit weight for mango sales. This was taken up by the District Commissioner who announced that the unit selling weight for mangoes must be reduced from 48 kg to 40 kg throughout the district from 2019. CDAIS also facilitated a group of mango farmers and government research and marketing staff to go on a learning visit to Thailand where they saw how the mango value chain there is supported to increase returns to growers.



Farmed fish

Facilitators: Parvez Chowdhury, Rathan Sana (assistant)

Mymensingh district produces 40% of all farmed fish nationally, with most activity centred on Trishal upazila. Commercial fish culture started here in the 1990s and expanded rapidly with quality fry and feed, a favourable

enabling environment, and market linkages, before stakeholders highlighted production and marketing challenges. CDAIS involved specialised organisations to facilitate training for fish farmers on organisational development and leadership and management skills, and 20 made the most of this training and formed the Mymensingh Fish Farmers' Foundation. A local hatchery owner provided them with office space, they opened a bank account, and submitted the relevant documents for registering their organisation. The group has been able to utilise skills gained from training on marketing and business development to negotiate an increase in the selling price of their fish of more than 50%.



Pineapple

Facilitators: Mohammed Jamal Uddin, Medu Aong Marma (assistant)

Demand for pineapple is increasing but marketing constraints persist for producers in Bandarban district, due to limited market access, production gluts, poor bargaining strength of farmers, high transport costs, and post-harvest losses. Technical and entrepreneurship training followed the development of new linkages through CDAIS, and farmers appreciated the need to upgrade their soft skills and to work together to resolve the challenges they faced. An exposure visit for Bandarban farmers, a Bangladesh Agricultural Research Institute (BARI) researcher and a district agriculture official to meet the pineapple growers' association at the centre of Indian pineapple growing and trading in Kerala allowed them to see innovative production and marketing practices first hand and talk to key stakeholders. This encouraged farmers to form their own cooperative, establishing the Bandarban Pineapple Growers' Association, and its members are now developing ideas for adding value to their produce.

Key lessons learnt

“The CDAIS concept is supportive to the government’s agricultural development plan and future strategy”, explains Anil Kumar Das, CDAIS Country Project Manager. “This is because it is encouraging farmers and cooperatives to access the free services from various government agencies and service providers, but that too few are aware is available. And whereas CDAIS worked with only some 200 farming families in this pilot project, we see the examples of success, and can now begin to scale this up. But with 40 million family farmers in Bangladesh, this will require lots of effort and support. And we have policies in place, but what we need are guidelines on how to effectively implement them.”

“An important tool was the CDAIS coaching plan”, explained Wahab. “This encouraged the facilitators to take ownership of the partnerships they work with, but not as drivers, and never dictating. It was the farmers who drove the process, and this has not been seen in Bangladesh before. This was the real beauty of CDAIS. The project concentrated on ‘people power’, encouraging the farmers to take control.” Das agreed, adding, “within the partnerships, leadership skills were developed, with exposure visits being especially important in building their confidence.”

“A crucial reason for the successes we witnessed is the willingness to try new things, initially by the National Innovation Facilitators, and to trust the project leaders”, said Claire Coote, Agrinatura Focal Person. “In turn, they passed this enthusiasm, integrity and commitment on to the communities and organisations they worked with so that stakeholders felt supported. This has created so much positivity. I hope that these attributes will continue to be passed on, so that people continue to believe that with the right skills and working together they can achieve their visions and objectives.”

And the next steps? “CDAIS is different from other projects and has proved itself on the field level”, said Dr Md. Kabir Iqramul Haque, Executive Chairman of BARC. “But it now needs to be disseminated through the Department of Agricultural Extension, and government departments need to work more closely with each other, especially on market links and channels”, a view shared by many in the project team. “It is important to showcase how the [CDAIS] approach had led to increased capacities and confidence, and how this leads to increased incomes”, added Fernholz.

The project concluded with a National Forum in April 2019, where farmers and facilitators from the three innovation niche partnerships, innovation support service providers and the project team shared their experiences in front of more than 70 participants including many senior officials. Nur Khondaker, FAO CDAIS Focal Person concluded, “We see the results and successes today. CDAIS has changed people, and given them a voice at policy level by forging links between farmers and the government. And we will strengthen the National Technical Committee as a platform to continue this work.”

“Development must be sustainable; though tractors and tools last a few years, human capacities last forever.”

Manfred Fernholz Team Leader, Food and Nutrition Security and Sustainable Development, Delegation of the European Union to Bangladesh

This story of results from the work of the CDAIS Bangladesh country team is based on interviews with them, CDAIS National Innovation Facilitators and various other partners.

Anil Kumar Das (FAO) – Country Project Manager; Baktear Hossain (BARC) – National Project Coordinator; Claire Coote (Natural Resources Institute) – Agrinatura Focal Person; Rozana Wahab (Ascend International) – Lead National Innovation Facilitator; Nur Khondaker (FAO Bangladesh) – FAO CDAIS Bangladesh Focal Person; Karin Nichterlein – FAO HQ Technical Officer Support; Interviews – Nick Pasiecznik (iCRA); Photographs – Nick Pasiecznik/CDAIS unless otherwise stated.

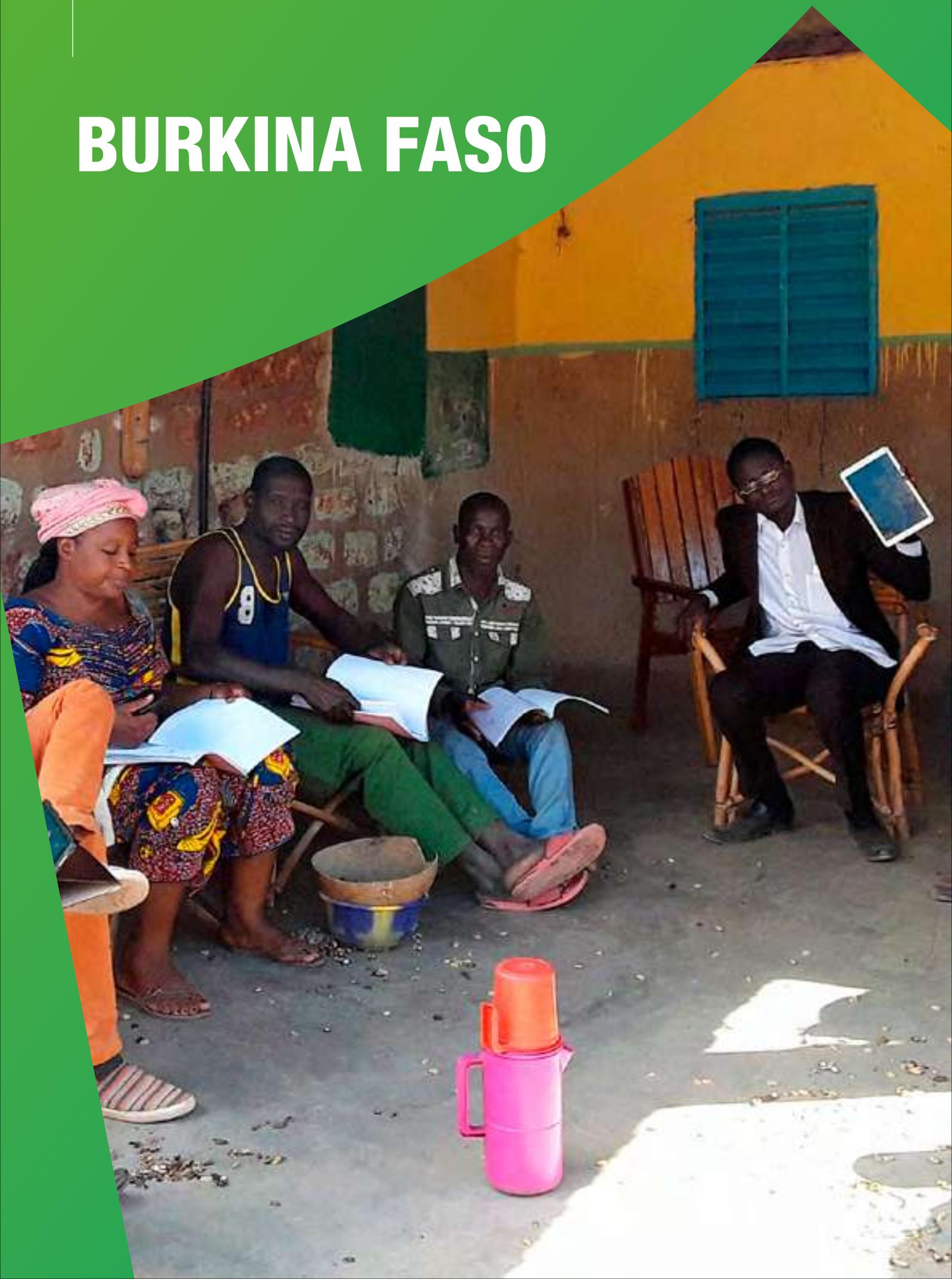
See also: *New markets for mangoes* (Wahab, R., Sorof Uddin, M.). pp 46–51, in: Agrinatura and FAO. 2018. *Building Competence and Confidence in Agricultural Innovation Systems. Stories of Change*. Agrinatura, Paris, and FAO, Rome. 196 pp.

CDAIS is implemented in Bangladesh by Agrinatura, represented by the Natural Resources Institute (NRI), University of Greenwich, FAO Bangladesh, and the Bangladesh Agricultural Research Council (BARC), in partnership with other institutions depending on the innovation partnership under consideration.



This project was implemented with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union. © 2019

BURKINA FASO



BURKINA FASO

The Government of Burkina Faso embraced innovation in agriculture many years ago, thus CDAIS could build on solid foundations. Six innovation niche partnerships were selected, each working on very different types of innovations, technically, socially or organisationally, and facing contrasting challenges for capacity development. Agrinatura partner CIRAD, well established in Burkina Faso thanks to strong partnerships with key stakeholders within the national agricultural innovation system, implemented the project with FAO and the Ministry of Higher Education, Scientific Research and Innovation (MESRSI). This conversation illustrates one of the key challenges to accelerate agricultural innovation in the country: the need to support innovation with organisations that do not usually intervene in agricultural development, such as developers of information

and communications technology (ICT) based solutions – incubators, telecommunications companies, institutes for computer science research or intellectual property rights. It then presents how such new types of partnership can be promoted at the national level by innovation support service providers and by the government.

“What we really learnt is sharing, in a process that included us all from the beginning to today, developing our capacities to collaborate, experiment and learn.”

Noufou Sankara President of member organisation Yako CAP

Learning to work as a group, using the CDAIS problem/solution tree at a forum on e-agriculture in March 2018.



Farmer organisations aiming to innovate

In 2003, seven farmer organisations gathered to create the 'Réseau-Gestion' network to support each other in implementing new advisory approaches that broke with traditional top-down, production-focused extension. With support from researchers, they developed 'management advice for family farms' based on adult learning methods, including training, exchanges of experiences, adding value to indigenous knowledge, and decision making support based on technical and economic data analysis.

After 15 years of experimentation and implementation, questions arose regarding the scaling up that was required to increase the number of producers with access to this advisory service, and the institutional and financial sustainability of advisory mechanisms. Marc Gansonré, a farmer and founder member, was clear: "Our question was how to move beyond internationally funded projects, to developing sustainable advisory mechanisms that reached more producers while meeting the needs and expectations of family farmers."

Thus, during the initial capacity needs assessment organised by the CDAIS team, members of Réseau-Gestion considered it important to find an ICT-based solution that would speed up the collection, processing, analysis and transmission of technical and economic data used to advise producers. The digitisation of the 'management advice for family farms' service was expected to share information quickly, for timely decision making and at low cost.

Traditionally, this is done through questionnaires that are expensive to gather, analyse and store, made even more difficult by the illiteracy of many farmers. Producer organisations also wanted to digitise data for evaluation of various experiments to give them added legitimacy with public services and international partners. "There is no point experimenting with something you cannot really value properly, to achieve goals we set ourselves a long time ago", said the President of FNGF, one of the member organisations supporting the move to digitise. "We want it to be digestible so that all actors see themselves there, and especially the technical services, advisers and facilitators", added Arouna Zongo also from FNGF.



Marc Gansonré of Réseau-Gestion explaining how agricultural production could be improved with the use of innovative ICT-based advisory services.



Leaders and advisors of farmer organisations testing a digital platform for improving their extension services, with the help of Ecodata West Africa, specialised in ICT-based solutions.

“CDAIS is like oil in the machine that accelerates ongoing innovation processes.”

Georges Yameogo National Project Coordinator and Deputy General Manager at Centre National de la Recherche Scientifique et Technologique (CNRST)

To support Réseau-Gestion in this innovative project, the CDAIS team decided to help them engage in a partnership with a developer of ICT-based solutions. A coaching team was established with two facilitators – Marc Gnoumou, also an advisor to the Ministry of Agriculture, and Idrissa Nacambo – responsible for identifying relevant technical partners, organising collaborative work, clarifying obstacles and helping to find solutions.

Creating new types of collaboration

The CDAIS team met Ecodata West Africa, which specialises in developing ICT solutions, and invited them to participate in the CDAIS marketplace in July 2017, resulting in an agreement to develop a proposal to digitise advisory services with Réseau-Gestion. The design was piloted, but tensions and misunderstandings emerged between the seven producer organisations, related to the provision of resources by each, and ownership of the future digital device. Numerous consultations and meetings eventually made them aware that they had different roles to play in order to guarantee the successes of this collaboration.

At the beginning, Ecodata was thinking only of a simple challenge, to digitise survey questionnaires for use via tablets, and storing data on a remotely accessible virtual platform. But their approach was still unknown to most people, requiring several meetings to find good modes of communication, and to agree on what a digital platform is, how it works, and how it can meet farmers' needs. Very quickly, facilitators found that support was needed to strengthen Ecodata's own capacity to carry out this development.

“One notable change was the new dynamism of the network's management thanks to CDAIS capacity development, especially after the initial assessment workshop, leading to an awareness of the need to work together.”

Marc Gnoumou National Innovation Facilitator

Developing technical and functional capacities

The main challenge for Ecodata was to build on the network's capacity needs assessment and integrate a digital platform into their already existing advisory services. As Aurélie Toillier, Agrinatura Focal Person and Centre de coopération internationale en recherche agronomique pour le développement (CIRAD) researcher said, “It was a new process for Ecodata, more used to tailoring ICT solutions to user needs rather than engaging in a collaborative solution that required ongoing interactions between users and designers.”

But Ecodata quickly realised that it would not be possible for network members to list every demand that the digital platform must meet, that it was difficult to anticipate the characteristics of a new tool that had never been used before, and that such reflection was in principle rather theoretical. “In such an innovation process, users cannot express their needs well”, said Véronique Henry of the supporting organisation Orange Lab, “so Ecodata needed to observe users in the long run, in an intuitive process that required a certain kind of thought from project leaders, based on design-thinking approaches and using tools like ecosystem maps and experience cards.”



Véronique Henry of Orange Lab, training the Ecodata West Africa technical team in an innovative approach to design thinking, focused on users' needs.

“The working method of the CDAIS coaching team helped us to clarify the modalities of collaboration among the Réseau-Gestion network and brought farmer organisations closer together.”

Mahamoudou Korgho family farming advisor

Francis Yaro of Ecodata, in charge of developing the tool explained his view: “This experience allowed me to strengthen my skills as a computer scientist. This was a first for me and I acquired a lot of knowledge at every step, but collaboration with farmer organisations was difficult at the beginning. However, with further exchanges and sharing between the coaching team, the network, and with practical tests, we adapted the tool to the needs of the advisors. This tool will boost the agricultural sector and allow both advisors and producers to improve their organisation and save time and energy.”

The training done by Orange Lab was also very useful to the CDAIS facilitators. “This allowed us to improve our coaching process by adding intermediate stages of the testing phases”, explained National Innovation Facilitator Idrissa Nacambo. “This made it possible for producer organisations to be more involved with the design of the ICT platform, and we discovered new tools that will be very useful for the facilitation of future co-design innovation projects.” And so, during this process, Ecodata saw limits and experienced a learning cycle that allowed it to progressively reinforce the capacities of its technical team.

“There were two great learning moments”, said Ecodata Director Alexandre Kabré. “First was the prototyping stage, and second was the introduction of the design-thinking approach that we did not understand at the time. For us, it was simply a matter of adapting existing digital tools that had been developed in other projects to the needs of the producer organisations. But then we realised the need to design something that truly fitted to their capabilities. We had to adapt to this, and introduce this new approach into our own work practices. As a result, the design process took much longer than expected, with many exchanges between our teams, the CDAIS support team and the

producer organisations. But, thanks to these many meetings, we got to clearly understand the value of this design approach to promoting innovation.”

Farmer organisations’ capacities were also strengthened. Collaboration between network members was strengthened with improved communication, especially around the identified common problem of the need to modernise the advisory services. Creating and maintaining a new partnership with Ecodata was also a major change. But this experience also improved relations between the producer organisations and the Ministry of Agriculture, especially through involvement in the reflection and revision workshop prior to implementing the ministry-promoted Council Farm Management Program (CGEA). In addition, stakeholders noted that another major challenge was to find a workable business model for the digital platform to be viable, so the network decided to try to use the platform to access future funding by increasing access to the maximum number of possible members.

“We cannot innovate alone. Innovation is by itself collaborative, and the facilitator has to be a ‘connector of stakeholders’ who accompanies partnerships towards a common goal.”

Marc Gnomou National Innovation Facilitator

Creating an enabling environment

CDAIS supported Ecodata in organising a forum to explore conditions for continued interactions to overcome obstacles to the development of e-agriculture in Burkina Faso. CDAIS facilitators designed an approach to facilitate sharing and learning, mixing diagnosis with group work and plenary discussions, and the forum was a real success. Participants felt that they learnt a lot about the complexity of the situation, initiatives in e-agriculture, issues, and the diversity of possible solutions. “The fact that actors are meeting to discuss common issues is a winning step!”, enthused Souleymane Jules Gaye from the NGO RONGEAD.

Government extension officer Albert Traoré agreed, “I discovered the existence of many initiatives and people involved in e-agriculture”. Issa Sidibe, Permanent Secretary for the Coordination of Agricultural Sector Policies, also noted the added benefit that “such a forum allows progress in finding solutions to strengthen the links between research and development.”

Further issues were raised at the national level during a CDAIS policy dialogue process that included the Secretary of State for Agriculture, the Minister of Higher Education, Scientific Research and Innovation, and two members of parliament. This gave them the opportunity to better understand the importance of the digitisation of advisory services, and the role they could all play in developing them. This work in support of multi-stakeholder innovation partnerships made it possible to concretely illustrate the importance of specialised coaching teams for both technical issues and functional skills.

At the end of the policy dialogue, proposals were made to strengthen the capacities of agricultural advisory services. In particular, it was suggested to the Ministry of Agriculture and the Ministry of the Digital Economy, to establish special

funds for equipment and infrastructure, and to allocate human resources to support farmer organisations so they can improve access to digital agricultural advisory services and funding tailored to their specific needs.

“The proposals of the working groups will be very useful to continue the capacity-development process to innovate at a political level”, said Toillier. “Rethinking the role of researchers, applying the instruments of the Directorate General of Scientific Research and Innovation, promotion of scientific culture during innovation days, and developing support services for innovation in the private sector, are all avenues to explore as we aim to strengthen national agricultural innovation systems.”

Zacharie Segda, Country Project Manager and Director of BUNASOLS, noted that “Burkina Faso needs to harness ICTs to modernise the agricultural sector and strengthen its contribution to economic growth. This is why this policy dialogue highlighted the relevance of working together – government, private sector, civil society organisations and NGOs – and that the government should enact strong policies to facilitate adoption of digital platforms at the farm level.”

Personal changes

CDAIS has also had impacts on individual behavioural change. Here is a selection.

“I was trained by CDAIS to facilitate multi-stakeholder workshops, and this allowed me to master key concepts and diagnostic tools such as the innovation timeline, problem tree, NetMap and many others. I also developed my facilitation and negotiation skills for partnership processes, especially for conducting win-win negotiations in difficult situations. And thanks to CDAIS, I learnt and reinforced my skills in organising events around innovation, evaluation of capacity needs.”
Lassaya Nikiema, National Innovation Facilitator, micro-irrigation partnership

“Personally, the project has strengthened my abilities at professional and family levels. We were trained to take the role of facilitator, wherever we are. And through

the ‘functional capacity’ development approach, I learnt a new way to give more power and more autonomy to members of my organisation, the CNABio.”

Clémence Samba Lankouandé, CNABio and National Innovation Facilitator, organic label partnership

“I am now convinced that the response to innovation problems and stakeholder issues must take into account functional capabilities as a priority for more efficiency and success in innovation projects.”

Idrissa Nacambo, National Innovation Facilitator, ICT advisory services partnership

“Thanks to the CDAIS project, we are no longer afraid to exchange or meet financial partners such as banks. Teamwork and our good organisation gave us a lot of confidence. Our products are of good quality and we receive positive feedback from our customers.”

Dembélé Martine, National Innovation Facilitator, agri-food processing partnership

Innovation partnerships in Burkina Faso



Sunflower

Facilitators: Drissa Sangare (extensionist), Salmon Zongo (MAAH)

Sunflower production was developed in Bobo-Dioulasso region between 2009 and 2013 thanks to a network of actors, producer organisations, processors, public research institutes and development agencies. However, technical obstacles including poor seed and unsuitable farm tools forced producers to abandon this opportunity. CDAIS strengthened capacities of actors to engage in policy and strategic processes to revive the development of the sector.



BioSPG organic agriculture label

Facilitators: Clemence Lankouande (CNABio), Lassaya Nikiema (DGRSI, MESRSI)

Since 2016, the organic BioSPG label designed by CNABio and partners has been used to promote organic production certified by a 'participatory guarantee system'. The main aim was scaling up by developing sectors that make certified products accessible to local consumers. CDAIS strengthened capacities of CNABio and partners to engage with public services to promote organic foods, strengthened their capacity to combine initiatives that support agribusiness, and strengthened the skills of producers to increase organic production.



Micro-irrigation

Facilitator: Raymond Kiogo (IRSAT)

Drip irrigation is being adopted only slowly by farmers, and there are too few local manufacturers, dealer networks and specialised advisers. Two levels of capacity-building needs were identified: for manufacturers to share experiences and build partnerships with researchers and local artisans to develop micro-irrigation systems tailored to farmers' needs; and for those involved in importing kits, to strengthen collaboration, reduce costs and develop a national distribution network.



Digitising agricultural advisory services

Facilitators: Marc Gnoumou (DVRD/MAAH), Idrissa Nacambo (FERT)

Réseau-Gestion is a network of six producer organisations pioneering the development of advisory services to their members, using the innovative 'family farming council' (CEF) approach to build the management capacity of producers. To lower the cost of services, the network aims to introduce information and communications technologies (ICTs), and CDAIS strengthened their capacity to design and test new ICT tools, and identify sustainable financing mechanisms.



Local property charters

Facilitators: Lassaya Nikiema (DGRSI, MESRSI), Blaise Yoda (DGFOMER)

Local property charters are municipal or village conventions that clarify or supplement land-use laws with local customs and practices. But due to divergent understandings of their application, a lack of coordination between technical departments of different ministries, and constraining project approaches, this innovative local development tool is rarely implemented. CDAIS strengthened the capacities of the Land Action Research Group to create a common vision and strategy to apply the charters.



Family food processing micro-enterprises

Facilitator: Raymond Kiogo (IRSAT)

Women have been creating their own agri-food processing companies for many years by promoting local agricultural products and bringing original foods to a market accessible to urban populations. The aim was to support their development by strengthening abilities to experiment and learn together, to negotiate and draw up contracts with their suppliers and distributors.

Key lessons learnt

Over almost four years, CDAIS supported six innovation niche partnerships, each with its own challenges. For some, the aim was to strengthen an innovation network (e.g. the organic CNABio label), or design a solution to a problem (e.g. digitisation of advisory services), or support entrepreneurial dynamics (e.g. family food processing), but in each case, “the key to success was a competent and well-equipped coaching team that took the time to build trusting relationships, and learn to understand what enables the various players to progress together”, explained Toillier. In doing so, the coaching team identified common capacities that needed developing, as Prosper Kola, responsible for the coaching of innovation support service providers, added: “For example, the lack of individual creativity is a major obstacle in allowing people to develop satisfactory solutions, while at organisational level, the ability to agree a strategic vision and manage human and other resources are key capacities to be strengthened.”

In addition, as noted by Aristide Semporé, responsible for the CDAIS monitoring system, “functional capacity building is meaningless if it does not complement the development of a technological or organisational solution. The motivation and commitment of individuals and organisations in a collective process is based on a ‘doing together’ approach that requires material support.” The CDAIS project therefore complements other innovation support initiatives that finance the human and material resources that are essential for innovation. “But, too often, periods of innovation last too long, and that ends up demotivating people”, observed Georges Yameogo, National Project Coordinator and Executive Officer with the national scientific and technological research centre (CNRST, Centre National de la Recherche Scientifique et Technologique). “If we can focus functional and technical support in a short time frame, then we will have a very effective innovation system.”

At policy level, there is already much support to innovation just waiting to be implemented. “The goal is not to reinvent the wheel but to apply our laws”, said Issa Tapsoba, Director General of the Directorate of Higher Education, Scientific Research and Innovation. “The challenge, then, is to train research and education organisations on new concepts related to innovation support, such as how

to enable the establishment of incubators.” The training of innovation professionals is one of the keys, and this was the subject of a specific recommendation during the policy dialogue: the addition of dedicated courses on innovation support services to add to agricultural curricula in schools and universities. “A continuation of the CDAIS project is needed, to sustain the learning at partnership level”, concluded Zacharie Segda, FAO Country Project Manager. “And it is necessary to work more with organisations that provide innovation services so we can replicate support mechanisms designed by the CDAIS team.”

“We need to better understand innovation processes and the factors that lead to innovation. We must also look for concrete solutions, identify priority interventions and develop strategies that will then make it possible to multiply these successes.”

Moussa Maiga delegate of the official Representative of FAO in Burkina Faso

This story presents results from the work of the CDAIS Burkina Faso country team, based on interviews with CDAIS partners, and prepared by members of the CDAIS country team.

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CDAIS is implemented in Burkina Faso by Agrinatura (represented by Centre de coopération internationale en recherche agronomique pour le développement, CIRAD), the Ministry of Higher Education, Scientific Research and Innovation (Ministère de l'Enseignement Supérieur, de la Recherche Scientifique et de l'Innovation, MESRI), FAO, and other partners in different partnerships.



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ETHIOPIA



Results in Ethiopia show positive outcomes from CDAIS activities, proving the benefits of integrating functional capacity strengthening across individual, partnership, organisational and national levels. Common to all these levels are the CDAIS team, who tell their stories here alongside other partners. Examples are presented from one of the five innovation niche partnerships in Ethiopia, and how new ways of doing things introduced by CDAIS since late 2016 have led to positive changes through the strengthening of chickpea cluster farming around Gondar in the north of the country. Organisations involved in the support of chickpea cluster farming, such as the Ministry of Agriculture's Extension Directorate and the NGO Self Help Africa, have also seen clear benefits from self-evaluation of their own internal processes, while CDAIS policy dialogues have led to two issues raised by farmers being transformed into concrete policy changes at the national level. And all those involved confirm that these changes are now irreversible.

Changes at farm level

"We are now becoming researchers in chickpea production", said Awoke Tadese, one of the new chickpea cluster farmers during a field day in Dembia in January 2019. "Before, yields were low. But we identified the cause as a need for suitable crop rotation and a need to implement recommended practices for chickpea production."

A CDAIS field day in Dembia, Gondar in January 2019, where 50 chickpea farmers shared experiences and concerns with 43 partners including extensionists, seed quarantine officers and other government officials, researchers and private actors, who also learn and offer advice. Another benefit was from the adoption of double cropping with a cereal crop grown between chickpea harvests, suggested and debated in earlier CDAIS field days. One farmer, Nega Mebiratu, was clear: "I tried double cropping, with better productivity than the previous cropping season." (Photo: Tegegne Derbe/CDAIS)





Thanks to CDAIS, the amount of certified chickpea seed arriving at Tsehay Multipurpose Farmers' Cooperative Union has increased from 65 tonnes to 125 tonnes in two years.

CDAIS introduced farmer field days, at which government officers, extensionists and researchers meet, discuss, exchange and learn with farmers directly. Awoke added that “these field days are unique because such events including the presence of all these different people do not happen anywhere else in the district and give us opportunities to tell government officials our concerns.”

Endalkachew Abie, CDAIS National Innovation Facilitator and manager of the local Tsehay Multipurpose Farmers' Cooperative Union was proud of the benefits: “The average farm size is about 0.5 hectares, divided into small plots where different crops are grown. The government

strategy is to try and ‘cluster’ farmers’ fields so larger areas of a single crop could be grown, in this case chickpea, with many advantages in terms of mechanisation, pest and disease control, harvesting and marketing. This ‘clustering’ requires farmers to agree to plant the same crop on neighbouring plots at the same time, and coordinate crop practices. Before CDAIS came and brought everyone together, farmers were reluctant. Now, yields have increased, up to 2 tonnes per hectare, and this also allows the production of more quality certified seed for planting and for which farmers get a better price.”

Stakeholders scale out the approach

Bringing everyone together has also had benefits for all involved, as Abebe Hailu from the Gondar Agricultural Research Centre explained: “Before, I would stay in my office and google a lot, now I go to the field and identify problems and look for solutions directly with farmers, and I know more people who I can approach to resolve issues. The director and staff see the benefits of this new approach too, as farmers now come to us to ask for training and new varieties. Because of this, the Centre is also now building new delocalised research stations so researchers can interact more with farmers. And these changes will not stop here, they will only get bigger.”

A similar story of clear outcomes – and that the CDAIS approach is being scaled up by the organisations involved – came from Demelew Nebiyu, Director of the Quality Control and Quarantine Gondar branch office: “Before CDAIS, I would only communicate by phone or letter, but since getting together and through the Action Plan we developed together to reach our goals, my relationship with others has changed a lot – with the seed union, government extensionists, researchers and farmers. A pivotal moment was the first field day I attended when farmers saw the benefits of clustering, and that they could keep their fields but gain extra benefits from all planting improved varieties at the same time, in the same place. From these successes, clustering is now spreading to other crops in the area. And at our quarterly meetings I shared my experience with other branch directors, and the regional director has allocated a budget to start organising similar meetings throughout Amhara Region.”

Quiet personal revolutions...

At all levels, CDAIS has made unquestionable and irreversible impacts on individual behaviour. Without exception, everyone involved highlighted the changes within themselves since they started to work with CDAIS, and how they also use the new skills, knowledge and attitudes in other aspects of their life and work.

Here is a selection from some of those.

“The new skills in facilitating diverse multi-stakeholder groups with CDAIS has given me more confidence. Now I listen more, consider others’ views and am more open to changing my own opinion. All the soft skill trainings particularly decision making and negotiating skills are also very valuable, as well as new tools like timeline, problem/solution tree, NetMapping and coaching plan. I have also adopted what I have learnt in my teaching so my students gain too, and that led me to start a new course in ‘partnerships and networking for adult education and community development’.”

Turuwark Warkineh, National Innovation Facilitator, chickpea partnership

“I now use tools like problem identification learnt through CDAIS in other activities, including how we organise our general assemblies, and with other crops, not just chickpea. Everyone in our seed union has benefited, and our reporting procedures are now much better as well. And the new advocacy, communications and negotiation skills I have learnt are very valuable to me in many different ways.”

Endalkachew Abie, National Innovation Facilitator, chickpea partnership

“How to develop an action plan together with others and the importance of following up have been very important to me, and how I organise my work has improved a lot. Also, in meetings with farmers and others I used to just present my views, whereas now I invite and encourage inputs from others.”

Misganaw Sendeku, associate National Innovation Facilitator, chickpea partnership

“From CDAIS, I have developed many new skills – facilitation, negotiation, reporting – which I now apply in my university teaching. I understand value chains better now, and have learnt to see challenges as potential opportunities. The use of progress markers to measure changes in behaviour and functional capacity have also helped me in evaluating my own performance, and this has really improved my planning and time management in everything I do.”

Tegenge Derbe, Monitoring, Evaluation and Learning Associate

“My communications skills have helped me to resolve conflicts, and working in partnerships has shown me the importance of collaborating. The coaching plan is a very useful tool that I will use again, and I have seen the real value of group reflection in helping to achieve common objectives.”

Meti Tamrat, National Innovation Facilitator, milk partnership

“I have learnt a lot of new social skills and these have changed my attitude totally. Now I ‘think better’. Before I would impose my views in meetings, now I listen, balance, analyse and am much more flexible in working with others. CDAIS has really ‘shaped me up’.”

Taffase Mesfin, National Innovation Facilitator, milk partnership

“These new field days help us to look at the limitations of our farming activities. Together with agricultural experts, quarantine officers and the seed cooperative, we now have a better understanding of what we can do, based on joint observations of our own farms.”

Wube Derib chickpea farmer, Dembia, Gondar

Sustainability and scaling up are also seen in other partnerships, for example with malt barley, as Chilot Tizale, Deputy Director General of the Ethiopian Institute of Agricultural Research, explained: “We will continue to apply learnings from CDAIS in the malt barley partnership, and also look at how we can use this approach in other aspects of our organisation’s work, using our own resources. We were sceptical at first about the value of strengthening functional capacities. But over time we have seen the value of this, and that they can help to increase the impacts of using our traditional, technical approach.”

“CDAIS has been very fruitful, as I now work with farmers and others, looking at problems and finding solutions to increase chickpea production. Cluster farming is one way to do this, a great innovation that CDAIS has helped to spread.”

Abebe Hailu Gondar Agricultural Research Centre

Organisational changes

Part of the CDAIS approach is to work with key innovation support service providers. This involves the CDAIS team working with an organisation to identify capacity gaps, develop a vision, and set priority objectives. This might, for example, require training to improve services and subsequent impact. Here, experiences from two of the three selected organisations in Ethiopia are shared, showing that this has led to positive outcomes that are not only sustainable, but that are likely to be scaled out after the project ends.

“Functional capacities were not given adequate attention before, when we only considered technical issues”, explained Fasil Kelemework from Ethiopia branch of Self Help Africa. And the changes were evident. “CDAIS has given us a new focus on communication, facilitation and negotiation, and we now apply these in training courses for farmer cooperatives”, he said. “And alongside this, our organisation uses what



“The CDAIS partnership has created so many new opportunities for working together.” Abebe Hailu, Gondar Agricultural Research Centre.



“We all now clearly know our respective responsibilities.” Demelew Nebiyu, Gondar Quality Control and Quarantine branch office.

we have learnt from the community seed partnership, such as helping cooperatives to prepare funding proposals themselves. The action plan helped us identify issues in our internal and external communications and services. It has led to increased transparency, and there have been changes that I thought were unattainable. We will now use our capacity-development budget to promote soft skill development throughout our organisation, catalysing sharing and improving our reflection and communication. And these changes don’t cost us anything, needing only commitment and a little staff time.”

Perhaps even more significant are the changes seen in the Ministry of Agriculture extension directorate, as described by its director, Yenenesh Egu: “I see this soft skill training already leading to behavioural change at all levels. A key moment was a workshop including many other ministry directorates and other external actors in October 2018. We identified capacity gaps and developed an action plan, which was validated with other directorates at a follow-up workshop in December. This was all really new for us, and it helped to build trust in our relationships, and this was fundamental in allowing us to develop a proposal to scale out the new approach. Thanks to the new confidence gained from CDAIS, I pushed for an innovative ‘integrated model village’ programme. Now the Ethiopian Government has allocated money to implement this, with potential benefits in the long term for all of our 53,000 extension staff nationwide, and the 16 million farmers who they directly support.”

“CDAIS brings bigger impacts because it targets policy-level changes, but includes actors at all levels through multi-stakeholder platforms and regular meetings. And these positive changes don’t cost us anything.”

Fasil Kelemework Head of Programmes, Self Help Africa, Ethiopia office

Linking farmers to organisational and national-level changes

A key concept of the CDAIS approach is not only to aim for changes in attitudes, skills, knowledge and practices at individual, partnership, organisational and national levels, but also to provide spaces to link these levels. In Ethiopia, as Amanuel Assefa, CDAIS Country Project Manager, said, “Of our major successes, the first involved the community-based seed partnership. After discussions at the outset, there was a clear issue with a policy that was leading to increased risks for the local seed union, affecting the production and availability of seed for farmers.

A draft directive was developed and agreed at a regional policy workshop in Harwassa in May 2018, which was then submitted at the regional level in December, with formal approval expected in February 2019.

A second success was observed with the feed quality and safety partnership, where CDAIS facilitated and supported members to develop a new directive on feed risk assessment. The directives were presented during a national dialogue in December 2018 which brought together some 45 participants. The event, officiated by the State Minister of Agriculture and the FAO Representative to Ethiopia, provided a space for actors to raise awareness on the directives and recommend actions for their approval. “The CDAIS policy dialogue also served as a space for actors to share their views with policy and decision makers and to recommend changes/improvements in policies related to the feed risk assessment, communication and management directives”, said Abdoulaye Saley Moussa from the FAO. These examples show how the CDAIS approach can, in just a few years, see issues raised by farmers and local-level organisations discussed at local, regional and national levels, leading to changes in government policy. And, as several team members noted, “these would not have happened without CDAIS”.

Samson Eshetu, Lead National Innovation Facilitator, added, “not forgetting the national marketplace event, where members of the chickpea partnership impressed with their presentation, and interested a USAID [United States Agency for International Development] project to support their idea for adding value through processing. CDAIS helped the chickpea partnership to develop a technical working group and a convincing proposal, learning in the process, and they got the funding.” These are just a few examples among the many, and other changes are likely to have occurred ‘off the radar’.

“An important reason for the successes seen in Ethiopia comes from having a strong national team that supports each other in reflecting and learning.”

Hanneke Bouta Vermeulen Agrinatura Focal Person for Ethiopia

Innovation partnerships in Ethiopia



Chickpea cluster farming

Facilitators: Turuwark Warkineh, Endalkachew Abie, Misganaw Sendeku (associate)

Near the Dembia chickpea belt in North Gondar, the Tsehay Farmer Cooperative Union and other stakeholders identified fragmented production, poor control of chickpea diseases and pests, and limited coordination among value chain actors as key challenges. CDAIS strengthened the capacity of everyone in the partnership and created space for stakeholder interaction. Through this, and regular farmer fields days, chickpea 'cluster farming' was successfully practised after having previously failed, when farmers could see the benefits from coordinated input supply, field operations, marketing and lobbying.



Community-based seed production

Facilitators: Tegegne Wakoya, Tessema Alemayhu

Shortage of quality seed is a major challenge undermining smallholder productivity in Ethiopia, with only 20% of demand met nationally. In response, Self Help Africa helped establish the EDGET Seed Production and Marketing Cooperative Union in Butagira, but the quota-based seed marketing system was identified as a critical problem. With the Ministry of Agriculture, seed quality control agency, research institutes and others, CDAIS supported the union in establishing enforceable contracts through dialogue with regional policy makers, and a new directive that prevents seed producers from losses due to breaking contracts was developed.



Feed safety and quality

Facilitators: Getachew Asmare, Gemechis Jaleta

The quality and safety of livestock feed was identified as a critical challenge to building consumer confidence in animal products. High levels of aflatoxin in dairy products

was a triggering factor for stakeholders to consider the development of a directive for feed risk assessment, risk management and risk communication. The partnership became involved in a national task force including the government, NGOs, industry and farmer associations around Addis Ababa. CDAIS supported the development of a legal framework and guidelines. The directive is soon to be approved by the Ministry of Agriculture's national Veterinary Drugs and Feed Administration and Control Authority (VDFACA).



Malt barley production and marketing

Facilitators: Tolesa Alemu, Abiro Tigabie

Domestic production of malt barley is not keeping pace with a market growing at 15–20% annually, and 60% of this demand is imported. Arsi and Bale zones in Oromia regional state have tremendous potential to produce more, but stakeholders identified a shortage of quality seed as a key issue. CDAIS supported Kulumsa Agricultural Research Centre in partnership with government organisations, breweries and NGOs, to work closely with farmer cooperatives, and this led to farmers being able to greatly increase the production of quality malt barley seed.



Milk demand stimulation

Facilitators: Tatek Tesfaye, Taffase Mesfin, Meti Tamrat

Average annual milk consumption per person in Ethiopia is very low, at 20–25 litres/year, compared to 120 litres in Kenya and 180 litres in Sudan, with consumption of processed dairy products also low. The market for pasteurised milk is also low because more than 85% of demand is met by the informal system that trades in raw milk. Identified challenges included limited awareness of the benefits of pasteurised milk, and the health risks of unpasteurised milk. CDAIS supported the Ethiopian Milk Processor Industry Association (EMPIA), the Addis Ababa Bureau of Education and others to initiate school milk feeding at national level. This would open up a new market for pasteurised milk, improve the health and performance of school children, and support market linkages of smallholder dairy farmers and the milk industry.

Key lessons learnt

“Before, we saw the agricultural extension-to-farmer relationship as a simple top-down approach”, said Amanuel. “But complex value chains – including producers, processors and government and private experts – require a different approach to catalyse agricultural innovation. CDAIS is the first in Ethiopia to have an integrated approach to address capacity development at individual, partnership, organisational and policy levels. Before we had theories, but thanks to CDAIS now we have concrete examples and [see] how we can overcome the challenges.” Samson concurred: “Identifying policy challenges from the grass roots level and working up was something new that CDAIS introduced, and this gives stakeholders in the partnership level a sense of ownership and the knowledge that their voice is being heard.”

“A key part of the success of CDAIS was the training and coaching of national innovation facilitators,” explained Amanuel, “and they have proven themselves in being able to facilitate their own partnerships. Some have also been able to participate in international forums and have gained valuable experience in many other ways.” And everyone involved in the project concurs. In addition, for Elias Zerfu, Lead Monitoring, Evaluation and Learning Coordinator, “the most valuable aspect was providing a space for focused joint reflection”. Samson agreed, saying that “this is what makes CDAIS unique, along with the coaching plan as a ‘one-stop shop’, including planning, implementation and monitoring in a single document”.

But there was also reflection from the CDAIS team. “I think that innovation support service organisations offer the best opportunity for change – they could be one of the key change makers”, considered Amanuel. “Next time, it would be valuable to assess what would happen if the approach started with organisations rather than with partnerships. Also, we still have some way to go [in] bridging gaps at the highest level, especially in how strengthening functional capacities can catalyse agricultural innovations, and how we can best address bottlenecks at the national level. But I see advances and am hopeful that we can see results in the long term.” Elias agreed, adding, “the seeds of change we have helped to sow at the national level still need to grow, this will require more time”.

There have been clear outcomes of the CDAIS approach at individual, partnership and organisational levels, but for national-level changes, senior CDAIS team members considered that more time would be needed. Moreover, an extra year was requested to consolidate the progress made at all levels. But Amanuel also sees opportunities: “Since November 2018, we have a new Ministry of Technology and Innovation, and we can build links there and hopefully advance the adoption of the CDAIS approach more widely.”

In summary, trained and coached facilitators and appropriate tools allow for increased dialogue across all levels of agricultural innovation systems, including smallholders, and pave the way to enhance the innovation environment through adapted policies. Agrinatura Focal Person Hanneke Bouta Vermeulen concluded, “Many of these changes would not have been possible without the joint team effort. Working together with several organisations was not always easy, but we did our best to apply the principles that CDAIS promotes ourselves – of joint analysis, action, collaboration, reflection and learning. There was also room for experimentation with these new ideas on agricultural innovation systems, and the people we work with have noticed and appreciated these real life examples.”

This story of results from the work of the CDAIS Ethiopia country team is based on interviews with them and various other partners.

Amanuel Assefa (consultant) – Country Project Manager; Chilot Tizale (EIAR) – National Project Coordinator; Hanneke Bouta Vermeulen (iCRA) – Agrinatura Focal Person; Sampsom Eshetu (consultant) – Lead National Innovation Facilitator; Elias Zerfu (consultant) – Lead Monitoring, Evaluation and Learning Coordinator; Abdoulaye Saley Moussa – FAO HQ Technical Support; Simret Yasabu (consultant) – Communications; Interviews – Nick Pasiecznik (iCRA); Photographs – Nick Pasiecznik/CDAIS unless otherwise stated.

See also: *Innovating with chickpea cluster farming* (Warkineh, T., Abie, E. and Yasabu, S.). pp 96–101, in: Agrinatura and FAO. 2018. *Building Competence and Confidence in Agricultural Innovation Systems. Stories of Change*. Agrinatura, Paris, and FAO, Rome. 196 pp.

CDAIS is implemented in Ethiopia by Agrinatura (represented by iCRA), FAO Ethiopia and the Ethiopian Institute of Agricultural Research (EIAR), along with other partners in the various innovation partnerships.



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GUATEMALA



There have been clear changes in Guatemala and, according to those involved, outcomes exceeded expectations. These have resulted from the strengthening of functional capacities across individual, partnership, organisational and national levels, using processes that have evolved since the CDAIS project began in 2015. Of the four selected innovation niche partnerships in the country, the conversations here explore the experiences of avocado producers in Sololá, led by AIDA, the Association for the Integral Development of the Altiplano. And much has changed since CDAIS supported their progression from being a small group of growers from San Andrés Semetabaj alone, to become a consolidated and registered association representing groups encompassing seven municipalities. Supported by the Ministry of Agriculture and Livestock, CDAIS approaches showed the relevance of partnering with actors from different sectors, farmer-to-farmer communication, organisation and evaluation. And from this, links were also made from the grass roots to the national system level.

New collaboration at farm level

“Through CDAIS, we learnt to collaborate with each other”, said Manolo Jerez, one of AIDA’s managers, as he reflected on what had been achieved during a workshop in Panajachel, Sololá, in January 2019. “One of the most significant changes you can see today is our interest in tree crops and how to better manage them. Before, we worked only with the knowledge that our parents and grandparents taught us, but now we are exploring new knowledge on improved farming practices.” In the past, farmers in this region grew maize and beans and little else, for subsistence and for sale, though prices were always low and so incomes were poor. Then in 2005, farmers were introduced to a new variety of avocado, Hass, that had good market potential, and little by little, they saw the advantages of this new cash crop.

Niche members from Santa María Visitación, Sololá participate in a training course on avocado management facilitated through CDAIS by the independent consultant Byron Gatica.



GUATEMALA

“But without CDAIS we would not be where we are now”, said Yarucy López, associate National Innovation Facilitator and extensionist with the Ministry of Agriculture and Livestock (MAGA). Jerez also emphasised that what has been learnt has also been shared and put into practice: “CDAIS helped me understand more about better crop management. My biggest dream was to try to use 100% organic fertilizer, and during the last two years I have spent time learning, applying, adjusting and, importantly, using only resources on my plot, leading to a saving of up to 90% of my previous spending on chemical fertilizer. And though I am not a trained teacher, I now advise others who can’t come to our meetings.”

“Through CDAIS I learnt that, instead of sitting down to lament, to look for solutions ... I changed my mindset, and I am now a much more positive person, with a desire to improve what I’m doing and how I am doing it.”

Amparo García avocado producer, and women’s representative for 19 communities from San Andrés Semetabaj

“It is impressive that producers are not only looking to increase output, but are also focusing on product quality”, said Mandi García, CDAIS National Innovation Facilitator. “Amparo García, for example, used only chemical fertilizer before, but is now converting to organic thanks to CDAIS. And with all the training, this has also made us all understand how navigating complexity involves taking care of the environment as well.” Amparo García added that, “for me, CDAIS was the opportunity to improve something I had started doing some years ago, and also to improve my development skills in a world that is dominated by men. With CDAIS I learnt to have confidence and courage to express myself. The project has also taught me to identify goals and challenges, and to look for novel ways to overcome them.”

However, such changes in knowledge and practice are secondary to changes in attitude at another level. “The group identified organisational strengthening as their main capacity need back in 2016, and prioritised the need to become legally recognised”, said Mandi García. “And it



“The project awoke interests among the members in working better together, collaborating, how to organise themselves, and creating spaces with a collective and not individualistic approach”, said Manolo Jerez, a manager at AIDA.



“As a woman, it is important for me to show how we can play a bigger role in the association. Our contribution is important. We have things to say and different ways of working that can bring more benefits for everybody”, said Amparo García.

is here that CDAIS helped a lot, joining 20 organisations around Sololá into one voice, then linking them to the ministry and others. But it was remarkable how quickly the process went as the members’ functional capacities were strengthened, through the space made where avocado growers could develop together. This allowed them to satisfy the growing demand for avocado while also opening doors to other markets looking for solid suppliers.”

Building partnerships

“Stakeholder mapping helped the partnership understand linkages and forge new alliances”, added López. “And with the CDAIS capacity building, we were able to create spaces for interaction during field visits, which also helped to build organisational, marketing and lobbying skills.” And from these new capacities and facilitated meetings, new partnerships were built. “Since receiving support for official registration, the biggest changes for us came from the new links we made with MAGA”, said Jeréz, “as well as all the new links between smallholders, industry, institutions and local municipalities.”

Avocado producer Amparo García had a clear perspective of what partnership building represented: “The biggest benefit was to stop being passive, and to be proactive

“CDAIS allowed us to innovate by using our own capabilities, and to see opportunities where before we saw only drawbacks.”

Manolo Jerez Association for the Integral Development of the Altiplano (AIDA) manager

in relating with others. I now feel the desire to be an entrepreneur, part of an association, integrated with other associations, and involve other people in the work of AIDA.” Including a women’s cooperative was an important outcome of this desire to draw others in, with the leading voice being Amparo García, opening doors for young women to take a more active role. But it was ‘CDAIS spaces’ that opened their eyes to inclusion, as she added: “Women are good administrators, and if we all contribute a little, we can make the association grow even more.” Mandi García agrees: “The training course on value addition has really aroused the interest of women especially, and they are now becoming more involved.”

AIDA President Sergio Coroxón was clear about what has been achieved: “CDAIS has helped us to look for alternative ways and to develop an action plan. We are small producers, but through CDAIS we learnt to seek alliances with others if we are to create viable rural enterprises, and we are beginning to link with partners that used to seem unreachable, such as AGEXPORT and the Universidad del Valle de Guatemala.” AIDA is now on the way to exporting, but this empowerment resulted from many training courses in which CDAIS played an important role. However, the role of consolidation and achieving outcomes falls on those who have, during these years, placed emphasis on such issues.



CDAIS contributed to the official registration of the Association for the Integral Development of the Altiplano (AIDA) in August 2018.

Innovation partnerships in Guatemala



Avocado

Facilitators: Mandi García, Yarucy Lopez (assistant)

Avocado production in Guatemala has a long history, and this partnership sought to increase incomes among cooperatives in Sololá, building on results from the EU-funded Regional Program for Innovation and Research in the Value Chain (PRIICA). To achieve the aims, farmers saw that it was necessary to improve selection, conservation and propagation of high-quality planting material, and guidance for optimal management and marketing. But the capacity to organise themselves was the greatest need. With this vision, they put their efforts into establishing a producer organisation (AIDA), then scaling out to become an umbrella group. Association members then asked for and received training on organisational and business skills, leading to a workshop where they developed a strategy and a business plan.



Beans

Facilitator: Fernando Palma

Beans are a traditional food of huge social and economic importance for smallholders in Jutiapa and Chiquimula in the Altiplano. The aim of this partnership was to increase yields of a new drought-tolerant bean variety rich in iron and zinc (ICTA Chortí), by developing business capacities and generating immediate benefits for producers and consumers alike. This was achieved through awareness-raising campaigns and partnerships with Semilla Nueva NGO, health centres and ministry extension agents. Training focused on strengthening functional capacities of producer groups, especially the seed union ATESCATEL in Atescatempa, Jutiapa. A strategic plan was developed, which allowed actors to better understand their respective roles within the partnership, and more effectively direct their efforts towards a common goal.



Cacao

Facilitator: Percy Ac

Growing national and international demand for high-quality cacao is an excellent business opportunity for farmers. This partnership aimed to improve production and processing by strengthening capacities of producer organisations in the Atlantic coast to meet this demand. CDAIS supported them to conserve and multiply native disease-tolerant clones with the characteristics required by the market, and standardise post-harvest protocols. With a well-defined national strategy, CDAIS contributed to the farmers' common vision. Reflection and refinement workshops allowed actors to realise the importance of governance issues within producer organisations. One main activity in 2018 was participation in the 'cacao forum', along with the exchange of experiences with cacao producers and processors in Honduras.



Honey

Facilitator: Cristian Miranda

Beekeeping produces important benefits besides just honey, such as jobs, income, food and medicine, and this partnership strengthened organisational and business skills of cooperatives in Huehuetenango. Though most honey produced in Guatemala is exported, only 30% is exported directly by producer cooperatives, and members of this partnership are amongst the exports. This partnership expanded and reactivated a second-level producer association (CONAPI), allowing members to improve internal governance and strategy, and initiate a dialogue that resulted in a direct policy change overturning a tax imposed by the Ministry of the Environment that had penalised honey producers. Further workshops renewed their statutes, and a first-level association (CIPAC) also elaborated its own strategic plan.

“CDAIS teaches us to be self-sustaining, creative and competitive.”

Sergio Coroxón AIDA President



Another important event facilitated by CDAIS was the agricultural week in the city of Antigua, allowing the exchange of experiences on technical, agronomic, market, traceability and agricultural practices.

Organisational changes

Another part of the CDAIS approach is to work with key innovation support service providers, to improve their services that will in turn increase subsequent impact. The national team helped organisations to identify capacity gaps, develop visions and set priority objectives. These showed that positive outcomes could result that were not only sustainable, but also likely to be scaled out after the project ends. Representatives of two selected organisations, Pablo Girón from CONADEA and David Valdez from the Institute

“If it had not been for CDAIS, we would not be where we are now. We came from ignorance, though things developed gradually. But it had to happen like that, because if we had moved quickly, at some point things could have gone wrong.”

Manolo Jerez AIDA manager

of Agricultural Science and Technology (ICTA), explained that this process opened their eyes and allowed them to see the importance of developing functional capacities in the ways that the CDAIS approach proposes. Valdez added that “this has also allowed us to update our knowledge as great institutions do and the interest in doing things better has awakened me.” A further result is that ICTA has begun to have greater participation – in the last year of the CDAIS project, for example. ICTA staff supported learning activities in Chimaltenango on product transformation for all the innovation niche partnerships, with CDAIS approaches also being adopted for an ICTA post-harvest management project. “We can work very well together, though as an innovation niche partnership, we need to work harder”, said Coroxón.

Linking farmers to organisational and national-level changes

A key concept of the CDAIS approach is not only to aim for changes in attitudes, skills, knowledge and practices at different levels, however, but also to provide spaces to link individuals in partnerships to organisations, and to national debates. Julio Catalán, CDAIS Country Project Manager, explained what was achieved in Guatemala: “One of the

most important achievements of this process has been perhaps to make small producers sit at the same table with authorities from institutions such as MAGA, universities and AGEXPORT itself. Those in a partnership must continue to be empowered, and to have the know-how to choose each of the following steps to take after CDAIS.”

A good example of what has been achieved is that AIDA has just participated fully in the development of the first national avocado strategic plan alongside institutions including the National Council for Agricultural Development (CONADEA) and the Regional Consortium for Agricultural Research (CRIA). CONADEA is the national coordinator of strategic value chains, and an extremely important actor for sustaining advances made through CDAIS. The Institute of Agricultural Science and Technology (ICTA) is another organisation expressing interest in being involved, believing

that much can be done by avocado producers in the region. CDAIS also provided necessary support to develop links with the service provider Fundasistemas. Through these links with service providers, entrepreneurship and governance capacities were strengthened, which in turn helped in the development of the business model that AIDA is now implementing, including a better understanding of the need to look for new markets, while maintaining high product quality. The Fundasistemas foundation plans to continue working with AIDA after the CDAIS project ends.

Key lessons learnt

There have been clear outcomes of the CDAIS approach at individual, partnership and organisational levels, but for national-level changes, senior CDAIS team members

Personal changes

CDAIS has had impacts on many individuals. Here are some examples.

“CDAIS allowed me to learn about new methodologies, tools and the importance of capacity strengthening in all areas. I use this in my work with communities for the Ministry of Agriculture, where I now emphasise the importance of developing functional capabilities that CDAIS has taught me, as I now see that they are the engine of all processes of change.”

Mandi García, National Innovation Facilitator, avocado partnership

“The learning was very timely for me, for my capacity to negotiate, analyse, and build interpersonal relationships. I have tried to be an entrepreneur and the project promotes me to be creative, proactive, cautious with decision making and more of a protagonist, but above all to collaborate with others and especially with the other facilitators. This allows us to work as a team and to understand what is best, and I see that my character and handling of conflicts on a day-to-day basis has improved significantly.”

Fernando Palma, National Innovation Facilitator, bean partnership

“The dynamics of the work that we created with CDAIS improved my learning. The methodologies helped to serve as a platform where I could develop my skills as a professional, get involved with different actors, influence decision making at a policy level, participate as a leader amongst value chain actors, and understand my multi-disciplinary role. On a personal level, functional capacity strengthening is very relevant to what I do and how I do it.”

Percy Ac, National Innovation Facilitator, cacao partnership

“Since being invited to the CDAIS project, my expectations were many. But the project has a different philosophy, methodologies, tools, work sessions, and way of being. As Lead National Facilitator, the curiosity to better understand the partnership increased as it began to articulate better with learning by doing. My most important lesson was that capacities are diverse but do exist in people, so it is necessary to create a space that allows everyone to participate in production systems that allow the development of a diversity of capacities and knowledge that there is.”

Cristian Miranda, National Innovation Facilitator, honey partnership

considered that more time would be needed. However, the support that CDAIS has given to the avocado partnerships at the regional level has been fundamental to accelerating processes of development of a value chain that is starting to bring hope to the producers of Sololá. The gender approach has been strengthened throughout the process, and that was not exclusive to the avocado innovation niche partnership. In the other partnerships that shared CDAIS project activities, the presence and importance of the inclusion of women has become a fundamental work axis, considered by all involved as a key element for development.

Country Programme Manager Julio Catalán explained: “The beginning of the project represented a challenge for all of us who little by little got to understand the different methodologies that needed to be understood and applied. But it has been interesting to see how the process of implementation developed over these years, from the complexity in the selection of partnerships at local level, [to] the National Innovation Facilitators, and key actors at national level. Assimilation of the approach was improved with the passage of time, and after reflection and learning of the national team through several workshops, training courses, the marketplace and policy dialogue events. But time is always a factor that plays against projects of this nature, and one of the lessons learnt is the need to control the timing between planning and execution.”

Regarding linkages and the ‘dual pathway’ approach used by CDAIS, working at the level of niche partnerships and national systems, Mandi García offered insight: “AIDA is at a critical moment of consolidation of its processes and the involvement of new actors, as they work to have increased representation at the national level. But CDAIS has opened our eyes to the fact that it is important to understand our work plans, participate in activities when summoned, and come together to reflect on what we do and what we can do to improve.”

Agrinatura Focal Person for Guatemala, Nury Furlán, noted that “aligning CDAIS with national policies and value chains prioritised by the Ministry of Agriculture has allowed a strong involvement by service providers such as the National Council for Agricultural Development (CONADEA) and the national Institute of Agricultural Science and Technology (ICTA), responsible for coordinating multi-stakeholder platforms at the national level. Likewise, we have been able to create a team of National Innovation Facilitators who share a vision

and, despite working in different partnerships and regions, share experiences, information and knowledge. Furthermore, working in neighbouring countries that share cultural, linguistic and challenge elements provided an added value, allowing the team to work as a bi-national network of individuals striving to promote agricultural innovation.”

Furlán had some further key observations: “CDAIS did nothing more than make available a series of tools that allowed value chain actors make alliances with others that share common objectives. Beyond that, through the provision of innovative monitoring, evaluation and learning tools, CDAIS offers, through a scientific approach, evidence of the contribution of strategic partnerships to achieve tangible results.” And she concluded, “CDAIS comes to the country at a time when it is important that different actors working for rural development do so in a coordinated and oriented way towards common objectives. From what I have seen, innovation niche partnerships can serve as champions to demonstrate that the impact of investment in technological innovation in agriculture can be greatly increased if it is accompanied by the development of technical, soft and agribusiness skills.”

This story presents results from the work of the CDAIS Guatemala country team, based on interviews with them, CDAIS National Innovation Facilitators and various other partners.

Julio Catalán (FAO) – Country Project Manager; Marco Vinicio Cahueque (MAGA) – National Project Coordinator; Nury Furlán (Agenzia Italiana per la Cooperazione allo Sviluppo, AICS) – Agrinatura Focal Person; Stefano Del Debbio (AICS) – Agrinatura key contact person; Jair Escobar (consultant) – Lead Monitoring, Evaluation and Learning Coordinator; Per Rudjebber – FAO HQ Technical Support; Interviews – Jair Escobar (consultant); Photographs – Jair Escobar/CDAIS unless otherwise stated.

See also: *Avocados – from annual to tree crops* (Escobar, J., Coroxón, S. and López, Y.), pp 110–115, in: Agrinatura and FAO. 2018. *Building Competence and Confidence in Agricultural Innovation Systems. Stories of Change*. Agrinatura, Paris, and FAO, Rome. 196 pp.

CDAIS is implemented in Guatemala by Agrinatura, represented by the Italian Agency for Development Cooperation (Agenzia Italiana per la Cooperazione allo Sviluppo, AICS), Italy, FAO Guatemala, and the Ministry of Agriculture and Livestock (MAGA).



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The CDAIS project has been an accelerator of processes, with results that have spread from community to governmental levels. Those who have been involved consider that CDAIS was a key reason for these changes, having arrived as a springboard in 2015. Of the four partnerships in Honduras, these conversations explore the experiences of potato producers in La Esperanza, Intibucá, home to almost 70% of national potato production. Since 2015, much has changed for them: from a small group of growers, eight associations have become consolidated organisations. Supported by the government's Agriculture and Livestock Secretariat (Secretaría de Agricultura y Ganadería, SAG) and accompanied by CDAIS, the process has shown the relevance of multi-stakeholder partnerships, farmer-to-farmer communication, organisation, and participatory monitoring and evaluation. And from this, there have been organisational and national-level changes, with a new ministerial agreement that guarantees future government support to the innovation niche partnership, providing space for the producers to engage in strategic and political processes.

“Before CDAIS, I worked without clear objectives, I worked just to work. But now I look towards the future, and learnt that you have to abandon certain practices in order to innovate.”

Santos Méndez potato producer, CEDROS association Facilitator

From seed potatoes to national policies

“Through CDAIS, we have learnt about the importance of our capacities, and sometimes that as a small producer and because of a lack of training, you can't develop these on your own”, said Santos Méndez, a farmer and member of one of the eight producer organisations in the potato innovation niche partnership. Appropriation of the CDAIS methodology empowered the producers and gave them a better understanding of the needs of the different actors as well as what was required to improve potato yields and quality. Another potato farmer, Rodolfo Hernández offers

a youth perspective: “On a personal level, my participation in the training processes with CDAIS has allowed me to reorganise my work in the field and outside it, to understand the importance of being organised to achieve our common goals. I have opened my mind to other things too, and this has allowed me to develop, to communicate better, to build relationships with others, and that is extremely valuable.”

Amalia González from the La Rinconoda Monquecagua association was clear about the benefit to her and her fellow farmers: “Through CDAIS I was able to expand my horizons by visiting other farmers, and took part in the struggle to become an organisation. This was not only to earn money, but also to create work and seek a better quality of life. There were also many other changes in our organisation thanks to CDAIS, including the opportunities we had to participate in exchange study tours, which were important for us to be able to improve our agricultural practices. And this also dynamised the ways we are working together, collaborating to achieve higher levels of production and better-quality potatoes.” And she added that improved seed production was a key element for them, and they are now selling quality seed potatoes to other farmers in the area.

Santos Gutierrez, President of the APROMIL potato producers' association has a longer-term vision: “For us it is important to better market our product, and with the new partnerships we hope to start improving our sales. Through CDAIS we have been able to understand the relevance and implications of organisation, and this has allowed us to see the next steps – a need to unify pricing and packaging. And we will soon have our own brand.”

Stakeholders have seen huge progress since CDAIS first met with some small groups of potato producers in 2016, with more actors from various sectors becoming involved during the capacity development. PRONAGRO (national agri-food development programme) and the mayor's office in Intibucá became key partners for the operational leap that potato producers have had. Edwin Flores, Technical Secretary at SAG noted that “CDAIS came as a glove, because at PRONAGRO we were trying to consolidate a potato value chain and it helped us.”

“Now after coordinated work and dialogue with government authorities and cooperatives”, continued Flores, “the Agriculture and Livestock Secretariat is about to publish

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“Through CDAIS it was possible to create training spaces on good agricultural practices, almost three thousand producers were accompanied during these three years”, said Hector García, National Innovation Facilitator, and researcher with the government’s Directorate of Agricultural Science and Technology (Dirección de Ciencia y Tecnología Agropecuaria, DICTA).

“I am now organising seedbeds in a different way after my experience talking to farmers in Guatemala with CDAIS”, explained farmer Abelardo Fiallos. “I learnt something new, and I’ve made my investment calculations and launched my seed production operation. I have a new passion, and a motivation to try new things.”



a ministerial agreement that enables better articulation of actions needed for improved production and marketing between the various actors.” Strongly influenced by the CDAIS policy dialogue process, it proposes strategic interventions aimed at increasing the competitiveness and sustainability of the potato sector, including the need to continue the strengthening of functional capacities at all levels.

Building partnerships

“At the start, few actors would regularly communicate with each other”, explains Hector García, National Innovation Facilitator of the potato partnership. “But, the main result of the analysis we made during the last reflection workshop was the strengthening of relationships. It is extremely valuable to see how the interactions have evolved, and how they share what they have achieved thanks to new knowledge and the changes in how they handle seeds and crops, and how they are now building experimental greenhouses.”

“From the construction of alliances that have developed over the years of CDAIS intervention, it is important to note the leading role taken by the Municipality of Intibucá”, said Arlis Zepeda, assistant National Innovation Facilitator. “They supported by offering an assistant technician called Elder Meza”, added García, “and financial support through the provision of agricultural inputs, among other activities.



Learning to share experience and work together starts in the field, but those capacities can also be transferred to building broader partnerships.

Two subsequent mayors were interested in the methodology that CDAIS shared with us, which led to an appropriation of the approach. This served to strengthen the relationship between farmers and the municipality, and, through the technician, there is better coordination between actors and government authorities that allowed us to achieve the successes we have seen and [ensures] that the work will be sustained into the future.”

““When I asked other members if they would lose the benefits after all they have learnt from CDAIS, their answer was immediate and came from all their mouths at the same time – ‘no, because we see how this allows us to achieve our objectives’.””

Amalia Gonzalez farmer from La Rinconada Monquecagua association

In addition to the stronger links with the municipality, input suppliers also now offer technical assistance and the promotion of environmental conservation programmes in addition to selling products. Thus, the input suppliers not only contribute to improved agricultural yields, but also generate increased awareness about the needs of potato and the impacts of crop production. This means that from having no help at all, some smallholder producers now have the technical assistance of up to three agricultural technicians. The Directorate of Agricultural Science and Technology (DICTA) also has links with producers. This included the delivery of the first domestically produced seed potatoes to satisfy market needs and in which small-scale producers participate, at an acceptable price and better adapted to local soil and climate conditions. This allows producers to feel more comfortable with the crop they produce, and it is accompanied by technical assistance for the good management of the improved seed they have themselves helped to develop.

“The project has greatly strengthened the producers’ understanding of each other”, said Carlos Valladares, representative of the Horticultural Network of Intibucá. “You see them more empowered in the different spaces

they participate in, such as meetings with the mayor or with government authorities, and they are much more aware of the roles they have, and can have, within the potato value chain.” The process of strengthening productive organisations through the development of capacities has allowed producers to identify the deficiencies involved in working only with the public sector or only with the private sector. “The vision has changed”, explained Valladares, “by understanding that to grow we need to participate in multi-stakeholder processes that link us more widely and not exclusively with private or public contracts, because in the long term this becomes a limitation.”

“The CDAIS project has opened doors to a different panorama in how to ensure that innovation arises when functional capacities develop well.”

Erick Martínez National Project Coordinator and Director of PRONAGRO (national agri-food development programme) of the Agriculture and Livestock Secretariat (SAG)

Learning from CDAIS

CDAIS has had impacts on many individuals, but especially on the National Innovation Facilitators. Here are their thoughts in their own words.

“CDAIS methodologies and tools allowed me to change my ways of working, and it is impressive how one can evolve. I spent 15 years working in the same way, but now in three years working with this project, I have changed. I understand how we can build things collectively, and that in the long run this leads to better results for everyone. And I now firmly believe in the development of capacities as a crucial element to improving the lives of our people and our crops.”

Hector García, National Innovation Facilitator, potato partnership

“I have worked a lot with actors at the field level, but throughout the CDAIS project I have realised the importance of giving people a voice, and also of letting them guide this process. Because, at the end of the day, they are the ones who must own it. They also have the best understanding of their own context. Though I as a facilitator can help them build a better environment for themselves.”

Arlis Zepeda, assistant National Innovation Facilitator, potato partnership

“I have been a person who likes to follow methodologies, and be strict with the steps that have to be followed to reach certain objectives, but with

CDAIS I learnt to be more flexible. But this does not mean abandoning the approach, but rather, it has allowed me to get closer to other realities, and from that, build knowledge with people. That has been a very significant change for me.”

Julia Cruz, National Innovation Facilitator, bean partnership

“As a teaching professional, the CDAIS project has allowed me to make changes in the topics I teach, and focusing on the development of functional abilities has been important for me. Another valuable aspect for me was to be able to abandon the idea that one is the foreman, and understand that we are people who can work together – [this] is certainly a key lesson from the project.”

José Ruiz, National Innovation Facilitator, cacao partnership

“Although the project focused on the development of capacities of partnership actors, as a facilitator I also had to progress on a personal level. And for me, what was very revealing is that we can work together and move from top-down management to self-management of activities. I say this because we reached a point where once the action plan was defined, it was no longer necessary for the facilitator to be there, regardless of what activities were to be carried out, as actors took ownership and the leadership was shared.”

Rudy Mejía, National Innovation Facilitator, coffee partnership



During the January–June dry season there are risks of severe damage by pests, especially the potato psyllid, known locally as ‘paratrioza’. Crop losses can be up to 80%, with control costs significantly reducing profitability. But through new collaboration promoted by CDAIS, impacts of this pest have been greatly reduced.

Organisational changes

Organisational dynamics in Honduras are extremely relevant for the innovation niche partnerships with which the CDAIS project has worked during the past three years. Another part of the CDAIS approach is to work with key innovation support service providers. The national team helped organisations to identify capacity gaps, develop visions and set priority objectives. These showed that positive outcomes could result that were not only sustainable but also likely to be scaled out after the project ends.

For Evangelina Trejo, member of the Regional University Center of the Atlantic Coast, the CDAIS project has been a valuable learning process, mainly because of the focus on value chains with which there are some research and collaboration relationships. “Although we are dedicated to the agricultural sector,” he said, “the CDAIS project has allowed us to improve our understanding of the needs in the cacao sector for example, and we are beginning to address these by developing functional capacities.”



By working with potato producers in the Intibucá area, CDAIS built an atmosphere of collaboration and integration.

“Through CDAIS, farmers have developed a much greater value of association, are much more participative in spaces for dialogue, and are more aware of their needs, which has allowed them to abandon contemplative attitudes and become protagonists of their own process of change.”

Carlos Valladares representative of the Horticultural Network of Intibucá

One of the most important things that occurred was the elaboration of the ministerial agreement for the potato value chain, following coordination from the farmers in the field, through the CDAIS facilitators and the country team, to government – leading to extremely valuable results for potato producers. This agreement now offers a concrete opportunity for farmers and other stakeholders to revitalise activities in the potato sector and open the possibility of a process of organisational strengthening on a scale that will go way beyond the Intibucá area.

Other targeted organisations include the Directorate of Agricultural Science and Technology (DICTA) and the Agricultural Education, Training and Agribusiness Development Service (SEDUCA). DICTA was also a key institution that worked alongside CDAIS activities with the innovation niche partnerships, by helping with the development of improved seed potato production

techniques, increasing the number of technicians in the field, and facilitating technical advances among actors in the bean innovation niche partnership. A key element of this coaching was that a designated facilitator from the Directorate served as a bridge between the objectives of CDAIS and those of DICTA, which over time became aligned to obtain better results.

Innovation partnerships in Honduras



Potato

Facilitator: Hector García

The potato partnership underwent significant changes at various levels, from the consolidation of eight farmer groups, to their members that also promoted a new and common vision. Today, there is a group – organised and coordinated in conjunction with the Mayor of Intibucá – that has established municipal ordinances for the management of stubble. The empowerment that has taken place in different actors is impressive: many are doing experiments at the level of plots with seeds, nurseries and soils, and some are working on an improved marketing process that includes product packaging. In the long term many producers plan to work in the process of transformation to give added value to the potato.



Beans

Facilitator: Julia Cruz

“Many things have changed since CDAIS arrived, we have evolved as an agricultural chain and we are stronger now that the project is retired. For me as a facilitator it has been satisfactory to participate in processes such as the creation of the bean chamber that has legal status, this has allowed us to improve the practices in the field: we now have a sowing plan that allows us to better forecast market prices and this has put us within the spectrum of the great national agro-industries. The bean innovation niche partnership has established new purchase–sale agreements in which producers have been able to better capitalise their annual bean production. This was something that hardly happened before.”



Cacao

Facilitator: José de la Cruz

“The development of capabilities that CDAIS put on the table has contributed to the consolidation of processes that for various reasons sometimes slow down more than expected. But after the project you can see significant changes. Cocoa farmers have a better idea of how to manage the finances of their field. The incorporation of new young actors and also a strong group of women has also been evident and key. Regional and technical committees have been created to accompany and advise producers. This allows the activities within the innovation niche partnership to be stimulated not only by the input of youth but also by the valuable contribution made by appreciating the gender perspective. A crucial point during the development of the CDAIS project, and one which was supported by PRONAGRO, is that the process of product transformation has been consolidated through a legally registered trademark.”



Coffee

Facilitator: Rudy Mejía

“Honduras is a country with a coffee tradition that, during the implementation of the CDAIS project, has been able to take advantage of the spaces that have gradually been opened and strengthened after three years of work. If we think of a large-scale innovation niche partnership, we can think of the coffee one: the work that CDAIS did contributed greatly to establishing new alliances and international trade agreements, which has boosted export levels ... Thanks to the participation of diverse actors and the strong influence of CDAIS, the certification of 100 farms of 100% organic coffee.”

Key lessons learnt

There have been clear outcomes of the CDAIS approach at individual, partnership and organisational levels. But at the national level, senior national country team members considered that more time would be needed to have a significant impact, as the project ended just when they had got the full taste of CDAIS and everyone began to appreciate it. At a local level, the support provided by CDAIS to the region of La Esperanza, Intibucá has contributed to significant changes in day-to-day activities in potato cultivation. The active role of youth has also been an important element that has gained relevance over time not only in the potato partnership, but also in the other three innovation niche partnerships, which have each understood the importance of finding ways to promote the sustainability of the achievements made, and not to lose the momentum already generated.

“Although it was difficult for all of us at the start because of the abstract concepts that the project presented to begin with,” noted Country Project Manager Edgardo Navarro, “for me and my colleagues, reinforcing the importance of constant reflection on what was done and what was achieved has changed all our perspectives, and I am now an ambassador of reflection. I apply it constantly and ensure that those in the partnerships also continue to apply it regularly.” And this certainly led to significant change over time.

This dynamic of multi-stakeholder integration has been strongly influenced by the policy dialogue that CDAIS promoted during the implementation of the methodology. As a result, local government have been incorporated into the activities of the innovation niche partnerships, and the participation of state representatives has promoted the creation of municipal ordinances, and officials are responsive to requests from actors of the potato and other partnerships. And perhaps the main contribution is best expressed in the words of National Project Coordinator Erick Martínez: “the mayors and different parts of government have promoted the hiring of agricultural technicians to give better coaching in the field, which is a practice that now adopted will not be abandoned.”

“In Honduras many things have changed”, said Navarro. “And a key moment was when we understood the relevance of reflecting, allowing actors of the different partnerships, and especially potato producers and other stakeholders, to actively participate in spaces for dialogue with key institutions,

municipalities, state secretariats and, more recently, international cooperation. And here, CDAIS was crucial as a multi-stakeholder connection and collaboration tool.” And the influence and impacts of strengthening soft skills was well accepted at all levels, though challenges remain of course. “Working with the nation Honduras CDAIS team has allowed me to understand the importance of functional capacities also at the core team level”, explained Nury Furlán, Agrinatura Focal Person. “And it is inspiring when you can testify to the successes of collaboration towards achieving a common goal, which for us is to see a better country for all Hondurans.”

“The contribution of the CDAIS approach has been very valuable, and achieved important results not only for the partnerships but also for the country.”

Edgardo Navarro Country Project Manager and FAO Honduras

This story of results from the work of the CDAIS Honduras country team is, based on interviews with them, CDAIS National Innovation Facilitators and various other partners.

Edgardo Navarro (FAO) – Country Project Manager; Erick Martínez (PRONAGRO) – National Project Coordinator; Stefano Del Debbio (Agenzia Italiana per la Cooperazione allo Sviluppo, AICS) – Agrinatura Focal Person; Nury Furlán (AICS) – supporting Agrinatura Focal Person; Jair Escobar (consultant) – Lead Monitoring, Evaluation and Learning Coordinator; Per Rudjebor – FAO HQ Technical Support; Interviews – Jair Escobar (consultant); Photographs – Hector García and Jair Escobar/CDAIS unless otherwise stated.

See also: *From potato pests to policy processes* (Villeda. M. and García. H.), pp 124–131, in: Agrinatura and FAO. 2018. *Building Competence and Confidence in Agricultural Innovation Systems. Stories of Change*. Agrinatura, Paris, and FAO, Rome. 196 pp.

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LAOS



The policy environment for agricultural innovation in Lao PDR has never been better. Agricultural development is high on the agenda at the most senior levels of government, and the Ministry of Agriculture and Forestry recently published a strategy framework that lays out multiple pathways for innovation. Based on the work to date, CDAIS National Innovation Facilitators are well positioned to continue shaping the agricultural innovation process long after the project ends. To show examples of how this has been achieved, conversations are shared from a pig production partnership, one of five innovation niche partnerships where the facilitation process was tailored to cultural contexts and governance structures. What is unique about CDAIS is that ‘success’ is measured by growth in confidence and capacities and not just in terms of positive economic outcomes. This ‘change from within’ pathway has attracted attention from other departments within the ministry, and prospects look good that CDAIS will leave a lasting legacy.

From rearing to breeding to processing

“You can go to any village in Laos and find a few people raising pigs”, said Sathian Khamchaleun, the initial spark who ignited the group in 2017. “What we did in Dong Kha village was to organise those families into a group!” Dao Sansihalath, one of the group’s founders, said, “CDAIS facilitators helped us build up our group. Before I was making a little money selling a few pigs. Now, thanks to group support, I can sell 20 to 25 pigs about four times a year and make a profit of about US\$25 on each pig, earning about US\$2000 a year.”

“CDAIS coaching has resulted in a better working relationship with local technical advisory staff and to new links with traders and other stakeholders.”

Sathian Khamchaleun Head of the Dong Kha pig production group



Pig farmers in Xanakhm district, mainly women, have gone from raising pigs to becoming breeders, and now meat processors and marketers.

Facilitated by CDAIS, the pig producers planned and organised a study tour to Thailand – where they used to buy their piglets – to learn more about piglet production from Thai experts. This was closely coordinated with District Agriculture and Forestry Office (DAFO) staff, some of who also attended. Mrs Pheng was the first in the group to start breeding her own pigs: “I had to learn a lot. It is quite difficult to breed piglets, and the boars are hard to handle and take a lot of care. But support from CDAIS facilitators gave me confidence to go ahead with my plan. Now our group can raise our own piglets and we save a lot of money and our profits are higher.”

When the group developed their action plan, their goal was clear. They had to learn how to breed their own pigs so they didn’t have to go and buy them. Then, they wanted to know how they could add value to their animals, and not sell them live to intermediaries or as cuts of meat. They wanted to know how to make sausages and other pork products. They received training, and they achieved their aims.



“It was so rewarding to work with this group to set a goal and then watch them implement their action plan to produce sausages”, said Khamla Sengphaxaiyalath (left), National Innovation Facilitator and champion for the pig production partnership since 2017. “And the results were delicious!”

The success of this group is clear ‘proof of concept’ that the CDAIS approach leads to sustainable change. The group members achieved their plan to form a cooperative, so now have better access to credit and government services and, perhaps as important, more status and prestige within their community. Their success is inspiring other farmers in the district to follow their example, and provincial and district authorities point to them as a genuine success.

Actors of change

What makes projects work anywhere are the people who fill the roles of starters, drivers and champions. The pig production group in Dong Kha village is a prime example. In 2012, Sathian Khamchaleun was just getting involved in

the village administration committee at the same time that the Asian Development Bank (ADB) announced a project in the district. Local DAFO staff contacted the village and Sathian raised his hand on behalf of a group of about 12 families. This project lasted a year and, while it had only limited impact on production, it encouraged the group to carry on, with Sathian driving the process by organising regular meetings.

“Our Ministry has been dealing with externally funded projects for a long time. They all recommend we should do this or do that, and when the funding ends the project stops working. This agricultural innovation system platform idea starting within our department might help us think in a different way about how we manage projects.”

Viraphanh Sichalearn Deputy Director General of Department of Policy and Legal Affairs (DOPLA)

CDAIS began in 2016 with an inception workshop in Vientiane. ADB sent the names of those who had been part of their Dong Kha project, and when the farmers received an invitation, they eagerly accepted the CDAIS offer to work together. Since then, other starters have emerged. Mrs Dao and Mrs Pheng both started breeding piglets, which is essential for the group’s long-term growth, and both are members of an active and increasingly effective management committee working towards forming an official cooperative.

The champion for this group is National Innovation Facilitator Khamla Sengphaxaiyalath, a researcher with the CDAIS national partner in Laos, the National Agriculture and Forestry Research Institute (NAFRI). Khamla has been tireless in his efforts to help the group connect with experts within and outside of government who can offer the training and support the group identifies as part of its action planning. Bounthong Bouahom, Director General

of NAFRI, has been a strong supporter and steps in to resolve the inevitable bureaucratic tangles that arise whenever innovation bumps into established policy and procedure. Thanks in part to his support, the Department of Agriculture and Forestry at provincial and district levels has become more open about expanding the CDAIS approach, and it is easier now for the department to participate in CDAIS-facilitated training and study tours. Starters need drivers to keep a project moving forward and drivers need champions to lead the way. Together, they are the force that leads to change at the farm level.

Group members applied the technical skills they learnt from their meat-processing training along with functional skills from CDAIS that helped them identify their marketing opportunities, leading to a range of different products, each with its own market.



Changes in service provision

The challenge for CDAIS is to take the approach to scale, and prospects look good. Early in 2018, the newly formed Department of Policy and Legal Affairs (DOPLA) invited the CDAIS team to a series of meetings to learn more about their approach to agricultural innovation systems. DOPLA is well positioned to influence policy, with a mandate to help all departments in the Ministry of Agriculture and Forestry prepare policies that further the ministry's agricultural strategy. In May 2018, the CDAIS team held a full week of training on innovation service support frameworks for NAFRI and DOPLA staff, and then coached them for two months in how to implement the first-ever national assessment of innovation support systems. In February 2019, DOPLA agreed to launch an agriculture innovation support system platform.



Personal transformations

The team of National Innovation Facilitators has been crucial in pushing innovation in Lao PDR through CDAIS. Here are some of their stories.

“It was a big decision to leave my position as a lecturer at the National University of Laos last year [2017], but I feel I can have more impact working full time for CDAIS. I also have much more freedom to travel and more freedom to make my own decisions about where and when and how to work.”

Lampheuy Kaensombath, Lead National Innovation Facilitator

“The CDAIS project is challenging my own capacity because this is a new approach for development. This new way of working has helped me increase my facilitation skills. I have better knowledge about development and new skills for doing research. I am also more confident when I present at national and international meetings. I have a better idea about developing work plans and in helping innovation niche partners work together to achieve what they want to do.”

Khamla Sengphaxaiyalath, National Innovation Facilitator and researcher at NAFRI

“I am working with a group in Nongkhamhat village in Outhoumphone district in Savannakhet Province. I enjoy working with them. Their first plan was to raise frogs but this proved to be unsustainable. It was very difficult for me to stand by and watch their venture fail, but now I see how failure can strengthen a group. They are now planning to raise poultry to sell to vendors who serve fried chicken to travellers on the main road.”

Syphachan Vannasy, National Innovation Facilitator and lecturer in the National University of Laos

“My main focus as a CDAIS facilitator has been on building the capacity of the local rice association to collaborate with other stakeholders. But the association wasn’t that effective and I was feeling frustrated. Working with CDAIS, I learnt new ways of working and I feel I am making progress again. Organising a simulation workshop for stakeholders was a turning point for me. Of all the participatory tools we have been exposed to through our work with CDAIS, this was the most exciting.”

Nikhom Chanthava, National Innovation Facilitator and researcher at NAFRI

Linking farmers to organisational and national-level changes

An important outcome of the CDAIS process is the confidence that comes from learning new skills and developing and implementing an action plan. Lampheuy Kaensombath, Lead National Innovation Facilitator, explained: “I called Mr Sathian one day and he was in a meeting at the Governor’s office with representatives from DAFO, the Industry and Commerce Office, Provincial Planning Office and some pig traders, talking about liveweight prices. This is a good indication that the pig partnership is moving up the value chain, and developing the skills they need to manage on their own.”

“This wasn’t the first time we have worked with a project, but CDAIS facilitators didn’t come and tell us what to do, they showed us how we could manage a group and make our own decisions. Now we can do anything!”

Sathian Khamchaleun Head of the Dong Kha pig production group



Bounthong Bouahom (left), National Project Coordinator and Director General of NAFRI, in conversation with the Governor of Vientiane Province, who said he was impressed how working with the pig group offered an example to DAFO staff on how to empower farmers.



A conversation of change: Viraphanh Sichalearn (left), Deputy General Director, DOPLA, discusses a point about the CDAIS approach with Technical Officer Soudachan Sisoulath.

CDAIS also supports local technical advisory staff to scale out innovations to other farmer groups in the district using the same approach. The CDAIS strategy was not to support the DAFO before the farmer group had enough confidence and autonomy, as the usual relationship between extension services and farmers is often top-down. Consequently, the two partners have a more balanced and profitable relationship in which the farmers identify and ask for what they need.

Lessons learnt

Based on the ‘change from within’ concept used by CDAIS in Laos, National Innovation Facilitators were specifically recruited from the government. Five came from the Ministry of Agriculture and Forestry (from the National Agricultural and Forestry Research Institute, NAFRI, and the Department of Extension and Agro-Processing), and two from the National University of Laos. These seven remain full-time employees of the government, but in the course of their work, they have developed an approach that incorporates the following lessons.

1. Focus on partnerships for innovation.

Innovation is both a product and a way of thinking, and to innovate, people need to change the way they think. To facilitate this, first identify where there are innovations or potential for innovations. For success, groups should be: (i) well structured, (ii) share a common concern or objective, (iii) have a core of active members as ‘drivers’, (iv) already have at least one strong capacity (technical, organisational or marketing) that can be built on, and (v) are located in a promising context.

2. Begin with the stakeholders’ point of view and their priority needs (even if you do not agree).

Help them to identify their needs, write their first action plan as a guide, and encourage them to change their plan as they learn and gain experience. ‘Learning by doing’ is the motto of the whole approach, following the action learning cycle of ‘plan – try – see what happens – revise the plan – try again’.

3. Translate expressed needs into capacity needs.

Expressed needs are what people say they want. At the start, people said they wanted money, equipment, materials, training and market links. CDAIS gave none of this, but strengthened their capacity to meet these needs themselves. They were coached in how to prepare budgets and access credit for equipment and materials, how to develop a training plan and select suitable trainers, how to assess markets and negotiate with traders – skills needed to achieve their objectives on their own.

4. Let group members make their own decisions, while encouraging ‘ownership’ of the action plans.

National Innovation Facilitators perfected what they called the ‘phone call test’. After the first action plan is agreed, the facilitator follows up for six months and then leaves the group alone. Later, someone else from the team calls to check

Innovation partnerships in Laos



Organic vegetables

Facilitators: Xayasinh Sommany, Khanthanou Lorsavanh, Lampheuy Kaensombath

Organically grown produce is becoming more popular with Lao consumers and demand is growing faster than supply. CDAIS coached two groups in Nongtae and Tongmang villages near the capital Vientiane, both now successful and self-sustaining, adapting their action plans, improving produce quality and expanding their client base. The Tongmang group encourages members to promote their own produce and have recently arranged a contract to supply a local ‘hot pot’ restaurant, which also displays the group’s logo on its menus. Thanks to CDAIS facilitation, the two groups are working together and with the government on quality control and certification standards.



Quality rice

Facilitators: Nikhom Chanthava, Lampheuy Kaensombath

The global market for rice is growing and the Lao Government wants to help fill the demand. CDAIS supports smallholder farmers’ efforts in Savannakhet to improve rice yields and quality to meet the higher standards of international buyers. The main challenge is coordination among themselves and with government agencies including research and seed production facilities, financial institutions, local millers, and large international companies. A workshop in June 2018 using a role-playing game brought together farmers, local traders, companies, bankers and government staff to simulate improvements of rice-quality value chains, and provided a turning point in changing attitudes.



Cattle breeding

Facilitators: Khamla Thammachak, Lampheuy Kaensombath

The Lao Government is strongly promoting livestock production to meet domestic and export demand, and the country is in a unique position to supply markets through production and transshipment. There is also great potential for smallholder

producers, if they can organise themselves and improve their technical and marketing skills. CDAIS works with a group in Ban Keun village, Tulakhom district in Vientiane Province. A turning point came during a stakeholder meeting in March 2017, when members – on their own initiative – successfully renegotiated a livestock loan arrangement that had been made on their behalf with a large Lao company. Following this, the group reorganised its management committee and turned their focus to improving the health and nutrition of their traditional breeds.



Pig production

Facilitators: Khamla Sengphaxaiyalath, Lampheuy Kaensombath

Pork is a mainstay of Asian cuisine. In Dong Kha village, Xanakham district, Vientiane Province, the pig production group has gone from strength to strength, thanks in part to a dynamic management committee. From an informal family cluster that was only fattening pigs for resale, the group now has 30 members producing over 2000 pigs a year, breeding their own piglets, expanding markets to other provinces, and have started adding value through meat processing. With some CDAIS ‘backstopping’, facilitators helped members develop stronger links with local government, suppliers, traders and experts who help them improve their technical skills and marketing agreements. The group is now fully self-sufficient and driving change in their district, and sharing their experience nationally.



Aquatic animal protein and rice

Facilitators: Syphachan Vannasy, Lampheuy Kaensombath

Aquaculture in rice fields goes back centuries, and farmers in Nongkhamhed and Phintai villages in Savannakhet Province wanted to intensify fish and frog production in their paddies. Frogs are a staple in rural diets but wild populations have decreased. Initial success encouraged others to adopt the practice, but they were unable to overcome technical barriers to scaling up, and did not want to take the financial risks. CDAIS then supported the group’s decision to switch their focus to developing an action plan for poultry production. What some might see as failure, CDAIS points to as a prime example of farmers taking the lead by learning by doing and making their own decisions.

their understanding of their plan, its rationale, what they have done, not done, and why, having to reply by themselves without any help. This makes them understand that they have to implement their action plan by themselves, although the facilitator may help them find financial support. The message to the partnership is simple: these are your activities, your ideas, and you need to organise them yourselves.

5. Bringing stakeholders together is a goal, not a starting point.

Development issues are better dealt with by bringing different stakeholders together, such as producers, processors, traders, extension workers and bankers. However, for any partnership to be effective, it must be desired by the partners, and they are not there just because they were asked to come or for the per diem. This is a part of the learning process. The stakeholders at the starting point (often, but not necessarily, farmers) will make their own links with others as they progressively realise what new partners are needed to achieve their objectives.

6. Develop a coaching strategy that focuses on learning and not on activities.

Stakeholder action plans change during the learning process, but the coaching plan remains the guideline. Facilitators use the coaching plan to monitor progress in strengthening the capacities that stakeholders identify as important but lacking, and the plan helps facilitators keep track of priorities and not just activities. They also use 'learning steps' to reshape each activity the partners say they need into a form that better helps them progress and strengthen their autonomy.

7. Scaling innovation from the bottom up.

It is important to start by supporting the most innovative group in a district, and then to determine and set the conditions for supporting other groups. When one group's success becomes sustainable, it is then time to help others, and DAFO has been finding ways to share these new capacities with different groups in other villages. The idea is: first make the group strong before scaling out to the village, and then make the village strong before scaling out to the district.

8. Partnership products are only a starting point.

Strengthened skills were applied to new products other than those initially planned. For example, once stakeholders learn how to do cost-benefit analyses, this can be used for

any other product they want to launch. Once stakeholders master market surveys, they can think about how to use their new skill to build new segments into their value chain, such as selling pigs for making sausages, or developing new value chains entirely. And when stakeholders become confident in their abilities, they can launch new practices.

9. Develop institutional capacity at country level to facilitate and support local innovations.

One institution alone cannot manage country-level innovation support. The challenge is to help national institutions to collaborate, and coordinate support for local extension teams which can efficiently facilitate local innovation. It is also important to sustain a national platform that supports innovation in agriculture. A formal network or communication mechanism should be established to allow government departments to work together. To do this, clear terms of reference for the network need to be developed for formal approval at ministry level, and DOPLA staff agreed to do this at a meeting in January 2019.

This story reports results from the work of the CDAIS Lao PDR country team, based on interviews with them, CDAIS National Innovation Facilitators and our committed partners.

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See also: Pig farmers building bridges to success (Sengphaxaiyalath, K., Kaensombath, L.). pp 156–161, in: Agrinatura and FAO. 2018. *Building Competence and Confidence in Agricultural Innovation Systems. Stories of Change*. Agrinatura, Paris, and FAO, Rome. 196 pp.

CDAIS is implemented in Lao PDR by Agrinatura, FAO Lao PDR, the National Agriculture and Forestry Research Institute, the Department of Extension and Agro-processing, and the National University of Laos.



This project was implemented with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union. © 2019

RWANDA



Rwanda has benefited from ‘hard’ agricultural investment projects in the past two decades, promoted by a supportive and responsive government in collaboration with various donors and development actors. CDAIS looked to increase the impacts of such investments through strengthening ‘soft’ skills in three innovation niche partnerships surrounding significant public, private or donor-funded infrastructure developments, and linking this to organisational and national levels. Of these, this story focuses on experiences from the Rwangingo–Karangazi catchment partnership, where a dam and irrigation scheme had led to conflicts between different groups of water users and not the immediate benefits expected. CDAIS brought everyone together and, through structured and facilitated dialogue, rapid progress was made, consolidated through meetings and training, and brought local issues to the national level through policy dialogues. The concept of the need for strengthening functional capacities has gained ground and is now increasingly accepted as a crucial component in future agricultural projects.

From conflict to cooperation and consensus

Near the dam, a small group of the catchment’s water users’ association members discussed what had been achieved in recent years. “Before the irrigation system all this marshland was only rough grazing”, recalled Frida Bamurange. “Then when it was built and the land divided into plots, people started growing rice here, and this benefited women especially by giving them a new source of income. But immediately this caused conflicts, because the rice farmers took all of the water.

“Thanks to the water users’ association I have more water for my maize and my animals. And more maize means more food, more feed, and more money”, said Steven Ruhima, maize farmer, Rwangingo (right), to Gilbert Kayitare, CDAIS Country Project Manager (centre) and Yussuf Nkurizabo, Vice-President of the water users’ association (left).



RWANDA

This left little or none for others in the catchment such as those growing maize and horticultural crops, and the livestock and dairy farmers.”

“Before, we knew nothing about water management”, said rice farmer Jonas Karanuva. “Now I am sure to have the water I need, which gives us more security.” Bamurange agreed: “As a maize farmer, I only started to benefit when our association was established, because it was only then that we began to share the water between us.” Yussuf Nkurizabo, farmer and association vice-president, explained the changes: “Before CDAIS, everyone did what they wanted and took what water they could, with no ownership or maintenance of the infrastructure. But through the CDAIS meetings and training, everyone got to know each other, learnt to listen, leading to better communication, understanding, and a new mutual trust. We saw the problems more clearly and what we could do to improve the situation. Now we look after the canals and sluice gates, and saw other benefits too, like from planting our crops at the same time.”

“The main irrigation canal runs for 33 kilometres from the dam in Rwangingo, Gatsibo district, into Karangazi in Nyagatera district”, Nkurizabo continued. “This also led to conflicts based on the district boundary. A really big achievement of CDAIS was to get the two local governments to work together, and now we have only one catchment, and can work ‘as one’.”

“CDAIS has led to great changes, through regular meetings with others, and a training course that taught us about better management, governance and our responsibilities, and which we then took back and shared with our members.”

Gerard Simparinka maize farmer, member of a maize growers’ group and the water users’ association

At the bottom of the catchment is the Terimbede Mworozu milk collection centre. “Before CDAIS, cattle keepers were in conflict with others in the water users’ association as we felt that we had a right to free access to water”, said Godfrey Mpambara, President of the livestock farmers’ group and the collection centre. “Then we understood the whole system, the needs of others, and that we should pay and play a part in the upkeep of the infrastructure.”



Travelling down the catchment, the main crop on the valley floor changes from rice to maize, and the slopes on each side change from maize and horticulture to grazing. The four main value chains (rice, maize, horticulture and livestock) each have their own producer associations, and all are represented in the umbrella water users’ association.

Innovation partnerships in Rwanda



Cassava value chain

Cassava is a major food crop grown by smallholders, especially in the south of the country. A processing factory was constructed, the Kinazi Cassava Processing Plant, but it was unable to source enough roots to make it profitable, initially running at only 7% of capacity. But since CDAIS became involved, partnerships developed between farmers, traders, public and private research and extension services, seeing the problems and agreeing ways forward. Now, only a few years later, business is booming for all involved – farmers with a secure market, producers of improved disease-tolerant varieties, and the factory itself that has increased production and now employs 43 permanent staff and up to 200 temporary workers. Led from district level, partners include the Rwanda Agriculture Board, and this work supplements the current phase of the national strategic plan that emphasises market-oriented and privately driven commodity development systems. Further identified steps included the need to (i) facilitate the private sector to take over cassava multiplication to improve supply to farmers, (ii) establish a risk-sharing (agri-insurance) scheme, and (iii) strengthen the capacities of small and medium-sized enterprises to improve cassava processing and marketing.



Dairy value chain

The dairy processing centre at Burera is one of several community processing centres set up as public-private partnerships. It opened in September 2015 to source milk from 25,000 cattle farmers and process it into cheese, yoghurt and fermented milk. But it immediately had problems, having no organised supply chain. But from November 2016, CDAIS helped by bringing different actors and interests together, followed by more meetings and coaching sessions. A series of reflection meetings in 2018 and 2019 assessed the achievements and remaining challenges, and also identified that benefits went far beyond just the dairy. The business is now developing and has passed a point of no return. Main recommendations from the national policy dialogue were to (i) improve milk handling infrastructure and increase

the capacity of the dairy to diversify the products produced, and (ii) expand local markets and enhance the quality of milk products across the whole value chain.



Rwangingo–Karangazi catchment

Under the crop intensification programme in Gatsibo district, this innovation niche partnership is centred on a reservoir and irrigation scheme for producers of rice, maize and horticultural crops, as well as livestock keepers. The core objective was to promote fair, effective and efficient use of water, alongside conflict management by improving communication and collaboration among all those who could benefit from more equitable water use. It stimulated a framework amongst water users, service providers including extensionists, input suppliers and a water users' association, and supporters. In less than three years, the multi-stakeholder partnership has implemented effective resource management, eradicated conflicts, and improved animal and crop productivity and farm incomes. Main recommendations from the national policy dialogue were to (i) provide incentives to the private sector to address post-harvest losses and lack of adequate technologies, (ii) establish the water users' association as a private business to maintain and operate the infrastructure, and (iii) review policies to allow the inclusion of competitive markets for milk and rice.

Facilitators: In Rwanda, each of the national teams worked in all partnerships. The National Innovation Facilitators are: Straton Habumugisha, Augustin Mutijima, Leon Niyibizi, Corneille Ntakirutimana and Gisèle Ntakirutimana; supported by consultants Désiré Mushumba, Jean-Pierre Bizimana and Pascal Gahire.

“CDAIS has improved communication between farmers, and between us and them.”

Ernest Nsigayehe Director of Agriculture and Natural Resources, Gatsibo district

Knock-on benefits

“There has also been a great change in how managers and members in our centre work together, and how we run our business”, explained Mpambara. “We learnt about record-keeping, the importance of market intelligence, and the need for formal contracts with our clients.” Member Eugene Kalisa concurred: “Before we didn’t consider ourselves as entrepreneurs, but after the business training we realised that we were a commercial enterprise. And after advocacy training, we now identify and prioritise our issues, weighing them up, and are seeing what we can resolve ourselves and what we need help for. And none of this would have been possible without the skills we learnt from CDAIS.”

“CDAIS has changed us completely, in how we plan things, do things, how we operate together. CDAIS has opened our minds, and through the reflection meetings, has also changed our mindsets.”

Athanase Mahoni President of the water users’ association

A catchment-level perspective

The President of the water users’ association, Athanase Mahoni gave his views: “CDAIS really changed the way we see and do things. Before we just waited for the government to come and make repairs, but now we have organised ourselves and undertake most of the needed maintenance ourselves. But in the lower reaches of the catchment the water flows slower, and the channels get choked with weeds and eventually silt up completely.”

“But after the advocacy training, we realised we can be more proactive”, continued Mahoni. “Now, with help from CDAIS, we are preparing a fully costed ‘catchment management plan’ that we intend to submit to central government and other potential donors for support. The government

constructed the infrastructure but then went away before we had matured as a user group, but we thank CDAIS for helping us to ‘graduate’. We now understand that we are the collective owners of the infrastructure, the dam, channels, sluice gates, but that we are also a business as well as an association. And the business training gave us ideas ... At a committee meeting in November 2018 we agreed to clear the weeds at the edge of the reservoir and stock it with tilapia. We then requested sealed bids for the fishing rights for 2019, and accepted the highest offer – four million francs (€4000) for the first year alone! This is a great new source of income for our association and, again, this would never have happened without CDAIS.”

From partnership to organisational changes

“I have really appreciated the CDAIS project, and I have seen great changes in how water is managed in the Rwangingo–Karangazi catchment”, stated Ernest Nsigayehe, Director of Agriculture and Natural Resources in the Gatsibo district local government. “Farmers also work better together now to reduce post-harvest losses and increase the marketing of their products. CDAIS is a strong methodology that could also show the way for other projects with similar capacity gaps. As such, I am advocating for the use of CDAIS in other projects at district level. The vice-mayor also took part in several of the sessions and the national policy dialogue, and is very supportive.”

A key partner in the dairy innovation niche partnership in Burera district is the milk producers’ cooperative (Coopérative des Eleveurs pour le Production et Transformation du Lait, CEPTL). CEPTL President Pierre Celestin Mbonaruzza explained that the cooperative buys from individual farmers via six community collection centres and aims to become a hub for the provision of innovation support services in the dairy sector. As such, it was selected for CDAIS organisational assessment.

CDAIS consultant Désiré Mushumba, who led the process, described what happened: “An organisational capacity needs analysis was carried out in July 2018, through individual interviews with guiding questions, to objectively reflect on what was needed to become



Godfrey Mpambara, President of the livestock farmers' group (left) taking a delivery at the milk collection centre that he also leads.



"There is a lot we can do, but clearing so many kilometres of blocked channels like this is beyond us", says Athanasie Mahoni, President of the water users' association.

a successful service hub in terms of the three dimensions, (i) internal organisation in terms of production and supply, (ii) resources (finance, markets, staff), and (iii) service provision (capacity to deliver) and internal and external relationships (capacity to relate). Before, they had significant management issues and were on the verge of collapse, but they elected a new committee and became more communicative. Since the process started there was new commitment from the leadership to restructure the cooperative, including representations from the different collection zones. A new level of trust has been built, and

members are now more engaged. And, more aware of the need to build networks, they have improved their external relationships with the main dairy, input suppliers, vets, and the Rural Dairy Development Programme."

But the final validation and visioning meeting in February 2019 indicated that CEPTL does not yet have the capacities required to become an innovation hub and, according to the members, the level of services provided is still low. More services are needed and the quality of the existing ones needs to be improved to reach out to more members, as well as to the entire local dairy livestock community. And CEPTL will need more functional, financial and organisational capacity to get to this level.

Making the links between levels

Building on partnership-level discussions in 2018, a CDAIS national dialogue event brought together 50 participants in Kigali on 31 January 2019. Twenty were from the three CDAIS partnerships, including producers and private sector partners, with representatives from the Ministry of Agriculture and Animal Resources and other government institutions, FAO-Rwanda and the CDAIS national team. Most of the priority policy issues identified across the three CDAIS partnerships related to increasing production to ensure food security and nutrition, changing monopolistic market structures, improving linkages between farmers and markets, increasing farmer participation in fixing minimum reference prices, and training farmers on calculating costs of production to better inform their price setting.

"Why are we talking about policy?", asked Gualbert Gbehounou, FAO Country Representative in his opening address. He explained that capacity development is fine, but that a conducive policy environment is also needed. And that that was the reason for this dialogue: as a platform for discussions between institutions and actors. Gbehounou also highlighted the achievements of CDAIS in Rwanda, which will lead to a national action plan on agricultural innovation systems. Three innovation niche partnerships were established, each having strengthened capacities including increased advocacy, lobbying, access to markets and negotiation skills. And thanks to this there is better collaboration with the Rwanda Agricultural Board

in the milk value chain in Northern Province and with the cassava value chain in Southern Province.

The dialogue resulted in a set of recommendations for enhancing the enabling environment for agricultural innovation in Rwanda, and an action plan outlining the way forward, summarised in a policy brief, 'Strengthening agriculture and livestock value chains in Rwanda through

agricultural innovation systems'. Straton Habumugisha, Lead National Innovation Facilitator and the monitoring, evaluation and learning focal point added other observations: "The concept is so simple, and effective. Another great achievement was that the issue of price setting was raised, and government officials said that they would now consider local consultations to assess and consider actual costs of production before deciding the price."

Uptake of CDAIS methodologies

CDAIS approaches were valued by the project team and have been adopted in their other work. As professionals in the field, many already knew of a number of the concepts, tools and methods, but not in the combination that CDAIS proposed. Here are views from four of them.

"The most important thing I learnt was the value of platforms, as spaces for farmers and other partners to resolve problems, by helping them to understand their situation and find realistic solutions. Now I use this concept in other training courses and work I am involved in. For example, in a WFP [World Food Programme] supported project on maize value chains, I established a platform following my experience with CDAIS, involving farmers, other market actors and local government. This led to good results, and the 17 cooperatives involved now solve many of their problems on their own."
Jean-Pierre Bizimana, entrepreneurship and business management consultant

"The organisational assessment methodology was more useful than others I have used before, especially as applied to innovation support services. Also, some of the monitoring, evaluation and learning tools were very good, in particular in the analysis of qualitative issues for assessing impacts for development projects. What was also very valuable was being able to participate in CDAIS global consultations, and to hear first-hand from those working in other countries, to see commonalities and that, with flexibility, this approach can lead to sustainable change."
Désiré Mushumba, agro-economy consultant

"I was used to the conventional system of one-way knowledge transfer, but CDAIS taught me the value of working with people and building on local knowledge with complementary approaches. This was amazing for me. And we applied the capacity to collaborate to ourselves, building a cohesive country team. I also saw how strengthening functional capacities leads to changes in attitudes and practices, such as from new interpersonal connections leading to better market access – the capacity to navigate complexity. But it is a gradual process ... And I now understand the components of an ideal innovation system, and what we need to do to ensure that they are there. Now, I am planning to apply CDAIS approaches with cooperatives in a World Bank project I am about to start on."

Straton Habumugisha, Lead National Innovation Facilitator

"I really appreciated the CDAIS tools and methodology for capacity needs assessment and especially for R&R [reflection and refinement]. They are really good. In February 2019, I used the R&R approach in my other work with a KOICA technical vocation and learning project and it worked very well, so I will use it again for sure. And by using progress markers, which were new to me, I can now analyse changes in functional capacities over time. I have also seen personal changes, as through CDAIS I now have more facilitation and organisational skills, which has given me much more self-confidence in meetings and workshops."

Gisèle Ntakirutimana, National Innovation Facilitator

Key lessons learnt

As part of the ‘dual pathway’ of the CDAIS methodology, capacity-strengthening efforts occur at partnership, organisational and national levels, with that at organisational level focused on innovation service support providers. But in Rwanda, organisations seemed reluctant to see the value of self-assessment, and this was eventually undertaken in only one of three that were targeted. The process of engaging actors in policy dialogue was, however, very effective for identifying, clustering and prioritising policy issues, proposing means of addressing them, and defining institutional roles and responsibilities in a participatory manner. This helped to distinguish which policy actions are needed at farm, district and national levels, and the responsible actors in each case.

Arnaud de Vanssay, Rural Development Team Leader of the EU delegation in Rwanda, in conversation with Gilbert Kayitare, CDAIS Country Project Manager, confirmed that, “CDAIS fits well with national strategies. It has established a link between local and national levels, and has been systematic in showing that much more can be achieved by strengthening ‘soft skills’. In Rwanda, however, there is a focus on ‘hard’ infrastructure and investments, and the value of soft skills is somehow underestimated though they can have great impacts, perhaps because they are also so difficult to measure.” Kayitare concurred: “Strengthening



Conversations of change – Country Programme Manager Gilbert Kayitare (left) discussing ways forward with Arnaud de Vanssay, Rural Development Team Leader of the EU delegation in Rwanda.

functional capacities should go hand-in-hand with such hard investments if they are going to have the expected impacts.”

“But seeing that CDAIS is a good example of the possible benefits from well-organised value chain platforms, working at local level and linking them to markets, we could invest more in this approach?”, asked de Vanssay.

Kayitare concluded with a simple recommendation: “To ensure local ownership and long-term sustainability of any agricultural programme or project, 5–10% of the total budget should be allocated to strengthening partnerships and soft skills.” Agreeing in part, de Vanssay added, “but this should also ensure continuity, so even a fraction of one per cent of a project’s funds invested every year in building platforms and soft skills might be enough. But at the EU we already want to use CDAIS methodologies in projects being planned.” Other means of advocating CDAIS approaches at national level were shared and considered. But what was clear is that the concept has definitely taken root, grown and set seed. Now those seeds need to germinate.

This story of results from the work of the CDAIS Rwanda country team is based on interviews with them, CDAIS National Innovation Facilitators and various other partners.

Gilbert Kayitare (FAO) – Country Project Manager; Charles Murekezi (MinAgri) – National Project Coordinator; Hans Dobson (Natural Resources Institute, NRI) – Agrinatura Focal Person; Straton Habumugisha (consultant) – Lead National Innovation Facilitator; Karin Nichterlein – FAO HQ Technical Officer Support; Interviews – Nick Pasiecznik (iCRA); Photographs – Nick Pasiecznik/CDAIS unless otherwise stated

See also: Resolving conflicts in water use (Habumugisha, S. and Mushumba, D.), pp 186–195, in: Agrinatura and FAO. 2018. *Building Competence and Confidence in Agricultural Innovation Systems. Stories of Change*. Agrinatura, Paris, and FAO, Rome. 196 pp.

CDAIS is implemented in Rwanda by Agrinatura (represented by the Natural Resources Institute, NRI, part of the University of Greenwich, UK), FAO Rwanda, and the Government of Rwanda through the Ministry of Agriculture and Animal Resources (MINAGRI), along with other partners in the different innovation niche partnerships.



This project was implemented with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union. © 2019

ACKNOWLEDGEMENTS

Thanks for this publication are entirely due to all those very many people who opened their hearts and shared their views during the conversations that formed the basis of this book. And what appears within these pages are their stories, from the eight countries, from farm and field, from buildings and bureaux. Though project managers and other CDAIS staff, from the various national partners, Agrinatura focal persons and FAO coordinators, and particularly from the many stakeholders at all levels – these are your stories.

Special thanks also to those who assisted in the country visits of the lead editor and associated support, to Elias Zerfu, Samson Eshetu and Hanneke Vermeulen (Ethiopia), Fatima de Nascimento, Oliveira Paulo and Madalena Teles (Angola), Gilbert Katiyare, Straton Habumugisha and Hans Dobson (Rwanda), and Rozana Wahab and Claire Coote (Bangladesh). Thanks also those from other countries who played key roles, especially Jair Obregon and Nury Furlán (Guatemala and Honduras), Terry Claydon, Lampheuy Kaensombath Sengphachanh Sonethavixay and Patrick D'Aquino (Laos), and Aristide Sempore, Gisele Minoungou, Normandé Prosper Kola and Aurélie Toillier (Burkina Faso).

Thanks also for a final review and validation of all county conversations from FAO staff responsible for each, namely Karin Nichterlein, Manuela Bucciarelli, Per Rudebjer and Abdoulaye Saley Moussa.

And last but certainly not least, is appreciation to Myra Wopereis-Pura for the inspiration behind the preparation of these stories and a thorough review of them all, and to Terry Claydon for the 'conversations' title.

FINANCIAL SUPPORT



This project was implemented with the financial assistance of the European Union

GLOBAL PARTNERSHIP



Food and Agriculture Organization of the United Nations

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Angola

- Instituto Superior de Agronomia (ISA), Universidade de Lisboa
- Instituto de Investigação Agronómica (IIA)



Bangladesh

- Natural Resources Institute (NRI), University of Greenwich
- Bangladesh Agricultural Research Council (BARC)



Burkina Faso

- Centre International de Recherche Agronomique pour le Développement (CIRAD)
- Ministère de l'Enseignement Supérieur, de la Recherche Scientifique et de l'Innovation (MESRSI)



Ethiopia

- iCRA
- Ethiopian Institute of Agricultural Research (EIAR)



Guatemala

- Agenzia Italiana per la Cooperazione allo Sviluppo (AICS)
- Ministerio de Agricultura, Ganadería y Alimentación (MAGA)



Honduras

- Agenzia Italiana per la Cooperazione allo Sviluppo (AICS)
- Secretaría de Agricultura y Ganadería (SAG)



Laos

- Centre International de Recherche Agronomique pour le Développement (CIRAD)
- National Agriculture and Forestry Research Institute (NAFRI)



Rwanda

- Natural Resources Institute (NRI), University of Greenwich
- Ministry of Agriculture and Animal Resources (MinAgri)



COLOPHON

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Editor

Nick Pasiecznik (ICRA/Agrinatura)

Copy-editing

Guy Manners, Green Ink

Design

Studio Teekens

Photographs

CDAIS unless otherwise stated

Printing

Drukkerij Tesink





This project was
implemented with the
financial assistance
of the European Union