

# Call for submission on adaptation actions and plans that could enhance economic diversification and have mitigation co-benefits<sup>1</sup>

*We thank you in advance for filling out this template with concise, evidence-based information and for referencing all relevant sources. There are several sections in the template: please fill the sections that are relevant to the work of your government or organization. As you will see on the last page of the document, more detailed information on case studies, tools/methods and other knowledge resources for dissemination through the [Adaptation Knowledge Portal](#) is welcome, but optional.*

## Name of the organization or entity:

The International Fund for Agricultural Development ([IFAD](#))

## Type of organization:

*Please choose as appropriate:*

- |  |   |
|--|---|
| <input type="checkbox"/> Local government/ municipal authority | <input type="checkbox"/> Regional center/network/initiative         |
| <input type="checkbox"/> Intergovernmental organization (IGO)  | <input type="checkbox"/> Research institution                       |
| <input type="checkbox"/> National/public entity                | <input checked="" type="checkbox"/> UN and affiliated organization  |
| <input type="checkbox"/> Non-governmental organization (NGO)   | <input type="checkbox"/> University/education/training organization |
| <input type="checkbox"/> Private sector                        |   |

## Scale of operation:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Global | <input type="checkbox"/> Regional      |
| <input type="checkbox"/> Local             | <input type="checkbox"/> Subregional   |
| <input type="checkbox"/> National          | <input type="checkbox"/> Transboundary |

## City(ies)/Country(ies)/Region/s of operation (if appropriate):

IFAD is the only United Nations specialized agency and international financial institution focused exclusively on reducing poverty and food insecurity in rural areas through agriculture and rural development. As such we work in rural areas in developing countries where 75 per cent of the world's poorest people live and depend on agriculture for their livelihoods.

## Description of relevant actions/plans or research:

Please describe the actions or plans that your entity has implemented. In case your entity carried out research on such actions/plans, please describe them.

The Adaptation for Smallholder Agriculture Programme (ASAP) channels climate finance to smallholder farmers so they can access the information, tools and technologies that will help build their resilience to climate change. Launched by the International Fund for Agricultural Development (IFAD) in 2012, ASAP has become the largest global financing source dedicated to supporting the adaptation of poor smallholder farmers to climate change, with committed

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<sup>1</sup> FCCC/SBSTA/2016/2, paragraph 15 (d)

funding of US\$305 million. Since inception of the programme in September 2012, 42 ASAP-supported projects in 41 countries were approved by the IFAD Executive Board, committing an amount of US\$285 million from the ASAP trust fund to concrete actions that help smallholder farmers adapt to the impacts of climate change.

The objective of ASAP is to improve the climate resilience of large-scale rural development programmes and improve the capacity of at least 8 million smallholder farmers to expand their options in a rapidly changing environment. Through ASAP, IFAD will drive a major scaling-up of successful “**multiple-benefit**” approaches which can increase agricultural output while at the same time reduce and diversify climate-related risks.

These approaches are described as ‘multiple-benefit’ because they typically build climate resilience alongside other benefits. They manage competing land-use systems at the landscape level, while at the same time reducing poverty, enhancing biodiversity, increasing yields and lowering greenhouse gas emissions.<sup>2</sup>

IFAD intervenes in the production stage of the agricultural sector in many of its projects. These interventions involve: **diversifying** household food production, enhancing agricultural extension services, promoting better **crop diversity** and biodiversity, integrating farming and agroforestry systems, and improving post-harvest management to reduce losses in terms of quantity and nutrient content.

This has been mostly done through Climate Smart Agriculture (CSA). CSA uses a wide range of approaches that typically maximize the use of natural processes and ecosystems, reduce excessive use of external inorganic inputs, enhance the diversity of production and tailor production intensity to the capacity of the landscape, and employ a mix of traditional and new technologies.

Adding manure to the soil supports a mixed system of livestock/crop production that **diversifies** risks across different products. This also implies a system of crop rotation – production of both food crops and fodder crops – which reduces risk at the farm level and often improves family nutrition. Agroforestry is another integrated system that combines trees with agricultural crops and/or livestock. The trees can in themselves be a source of income depending on the species, and can serve as carbon sinks. They can also serve to improve soil quality through nitrogen fixation (if they are legumes) and capture nutrients from deep in the soil (making them available through leaf litter), in addition to creating a more favourable microclimate.<sup>2</sup>

IFAD has followed its [Climate Change Strategy](#) since 2010 and will be updating it in 2018. In the update there will be a renewed focus on adaptation methods for smallholder agriculture to deal with climate change, based on the success of ASAP and also focusing on new mitigation co-benefits.

#### Description of relevant tools/methods:

*Please describe the tools and/or methods that have been developed and/or used.*

<sup>2</sup> <https://www.ifad.org/documents/10180/65e06cd3-5b59-4192-8416-a7089d91630c>

## Economic diversification

In its adaptation work, IFAD focuses on soft investments related to skills, knowledge and access to information, but also on hard investments in physical infrastructure. For instance, improved access to meteorological forecasts and training of extension services complements investments in mixed cropping and the adaptive engineering of rural roads.

IFAD's climate adaptation projects also take due consideration of local social and economic contexts. These factors ultimately help in determining the appropriate technologies and strategies that are aligned with community institutions and the values of affected groups. These include increased production functions as a result of sustainable intensification or **diversification, employment gains and net incremental income for smallholder farmers**.

Within IFAD projects economic diversification takes many forms, for example, **Vocational training**. Learning new skills in non-farm areas is practical because it curbs dependency on the natural resource base and can lead to good wages. Vocational training in motorcycle and engine repair, carpentry, shipbuilding, brick making, curing bamboo and establishing seedling nurseries are some of the areas that projects focus on, as they can be profitable trades.

In ASAP co-financed projects communities implement a mixture of options as part of either a diversification or sustainable intensification model. The choice to undertake new economic activities or invest in modifying production to increase resilience is largely based on local knowledge of uncertainty, as well as climate forecasts.

Economic benefits are often realized at the community level in terms of agricultural diversification (such as IFAD's work in [Turkey](#)), protecting productive lands and facilities ([Bangladesh](#)) or climate risk management ([Bolivia](#)). Financial benefits are targeted at the farm or family level, with increases in production and income ([Kenya](#), [Viet Nam](#)).

It is important to remember that investment in the agricultural sector is one of the most powerful ways to affect climate change adaptation. These investments do not just benefit smallholder farmers but contribute to wider development goals such as poverty reduction, functioning environmental services and cutting carbon emissions.

## Mitigation Co-benefits

The EX-Ante Carbon-balance Tool ([EX-ACT](#)) is an appraisal system that provides ex-ante estimates of the impact of agriculture and forestry development projects, programmes and policies on the carbon balance. The carbon balance is defined as the net balance from all GHGs that were emitted or sequestered due to project implementation, expressed in tons of CO<sub>2</sub>e. In other words, it refers to the difference that a project makes compared with a 'business as usual' situation.

The tool was used in a study, conducted by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) in collaboration with the Food and Agriculture Organization of the United Nations (FAO) and IFAD, to analyse mitigation co-benefits of ASAP co-financed projects.

The aforementioned study confirms that smart investments in smallholder adaptation can deliver mitigation co-benefits. The 13 analysed projects could provide mitigation co-benefits of up to 30 million tons of CO<sub>2</sub>e via emission reductions and carbon sequestration resulting from project implementation.

The study also finds that scaling up a number of project actions could significantly increase GHG mitigation. Given that ASAP's portfolio is expanding, and today includes 42 projects under design or implementation, the potential mitigation co-benefits are likely to be significant.

#### Key outcomes of the actions/plans undertaken:

*Please provide information regarding the outcomes of the actions/plans described above, and also provide qualitative assessment and/or quantitative data to substantiate the information, if applicable*

Two notable instances of economic diversification in IFAD projects come from Rwanda and Nicaragua.

In Rwanda, during a project which disseminated solar technology, an income opportunity was created. Smallholder farmers were selling the excess electricity that their solar panels were collecting to charge neighbours mobile phones. This created an income stream completely separate from on-farm activity which protected the farmer against climate shocks.

In Nicaragua farmers are moving from coffee to cacao. Coffee represents up around one-quarter of agriculture revenues, climate change has indeed already started to hit coffee farmers. High vulnerability of coffee to climate change due to its sensitivity to temperature changes and some very specific rainfall requirements mean that it is starting to pose a huge economic risk to farmers who cultivate it. IFAD smallholders are shifting towards resilient practices such as new shade-grown coffee varieties or switching to cocoa which is more adaptive and robust in more variable climate patterns.

In terms of mitigation outcomes, a study, conducted by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) in collaboration with the Food and Agriculture Organization of the United Nations (FAO) and IFAD analysed IFAD investments supported by ASAP in Bangladesh, the Plurinational State of Bolivia, Chad, Djibouti, Ghana, Kyrgyzstan, Mali, Mozambique, Nicaragua, Nigeria, Rwanda, Viet Nam and Yemen. It found that these projects, which have adopted different, context-specific approaches and adaptation priorities based on vulnerability analyses, contribute to mitigation goals in different ways.

From the study it can be seen that the extent and nature of mitigation co-benefits vary significantly among projects. For example, the projects in Nigeria and Kyrgyzstan have the highest overall project mitigation benefits of around 8 million tons of CO<sub>2</sub>e, despite a low carbon balance per, partly because of their vast geographical scale. In Kyrgyzstan, the mitigation benefits come mainly from grassland rehabilitation (11 million tons of CO<sub>2</sub>e) and better fodder crop management (47 million tons of CO<sub>2</sub>e). In Nigeria, increasing soil carbon in the annual cropland through better water management, increased use of animal manure and organic matter inputs from crop residues, and crop rotation with legumes provide the greatest benefits per capita (4 million tons of CO<sub>2</sub>e).

In contrast, the project in Nicaragua – which covers areas of 100,000 hectares or less – promotes actions that provide strong mitigation benefits per unit area of land and thus contributes a significant total carbon balance of around 2 million tons of CO<sub>2</sub>e or more. The projects in the Plurinational State of Bolivia, Ghana, Mali, Mozambique, Rwanda, and Viet Nam could all provide mitigation benefits of around 1 million tons of CO<sub>2</sub>e; the study therefore characterizes them as having a moderate impact on mitigation. The projects in Chad and Djibouti, in contrast, are projected to have a relatively modest total carbon balance.

Some projects appear to have a higher mitigation potential. For example, Mali's afforestation efforts and the introduction of perennial crops give it the highest impact density potential of over 3.5 tons of CO<sub>2</sub>e per hectare per year. In Djibouti, the rehabilitation of even a limited mangrove area yields

strong benefits per hectare, even though the overall project carbon balance is low due to its modest scale and an increase in the fishing fleet, which is expected to increase consumption of fossil fuels. Similarly, Viet Nam's modest overall project carbon balance needs to be seen alongside a higher per hectare mitigation potential, largely due to improved rice varieties and a greater mix of crops.

When considering the carbon balance of the 13 projects by activity type, the study found that most of the mitigation benefits lie mainly in grassland management and annual crop management, whereas livestock development is responsible for the highest level of emissions.

#### Description of lessons learned and good practices identified:

*Please consider the following points when describing lessons learned and good practices: (a) effectiveness/impacts of the actions/plans (including measurability of the impacts), (b) efficiency in the use of resources, (c) replicability (e.g. in different locations, at different scales), (d) sustainability (i.e. meeting the current economic, social and environmental needs without compromising the ability to address future needs).*

IFAD commissioned CCAFS to develop an economic assessment tool which they used for the publication [The Economic Advantage](#). Economic assessment provides a key input to planning of mitigation and adaptation actions in agriculture at national and project levels, offering an important tool to support planning, prioritization and mainstreaming of climate actions in sectoral development plans. One good practice which IFAD has identified through its economic assessment work relates to diversification of tree crops. Whilst diversification of tree crops provides economic diversification - tree crops requires several years for trees to mature. This can be alleviated by adding livestock or annual crops which have more immediate benefits. This also creates new opportunities for women to earn separate incomes.

The mitigation potential of 13 projects analysed in [The Mitigation Advantage](#) comes mainly from **land rehabilitation, improved cropland management practices**, and the **establishment of agroforestry systems**. Land rehabilitation has strong positive impacts on soil carbon sequestration per hectare. In contrast, improved cropland management has a relatively lower impact per hectare, but offers multiple other benefits, such as better soil fertility, nitrogen use efficiency, and improved water holding capacity. Significantly, the main sources of mitigation co-benefits in the analysed projects broadly correspond to IPCC findings on the most cost-effective mitigation options.

#### Description of key challenges identified:

*Please describe the key challenges associated with those actions/plans or the use of those tools/methods, that policy-makers, practitioners and other relevant stakeholders should know about.* The measurement and monitoring of both economic benefits and of GHG sequestered is still a challenge.

#### Planned next steps (as appropriate):

*Based on this experience or research, have next steps been planned to address/study some of the identified challenges, implement, scale up (e.g. from local to national context) or scale out (e.g. from one country to another) such actions/plans?*

We are in the process of developing a second phase of the ASAP programme where both economic diversification and mitigation co-benefits will be included and tracked.

#### Relevant hyperlinks:

*Please provide hyperlinks to sources of information.*

The Adaptation for Smallholder Agriculture Programme ([ASAP](#))

[The Mitigation Advantage](#) – Maximising the co-benefits of investing in smallholder adaptation initiatives

[The Economic Advantage](#) – Assessing the value of climate-change actions in agriculture

[The Adaptation Advantage](#) – The economic benefits of preparing small-scale farmers for climate change

[IFAD's Climate Change Strategy](#)

[Climate Smart Smallholder Agriculture](#) – What's different?

**Further information:**

Please do not hesitate to submit more detailed information on case study(ies), tool(s)/method(s) and/or other relevant knowledge resource(s) that are relevant to economic diversification. The latter will be shared through the [Adaptation Knowledge Portal](#):

- [Case study\(ies\)](#)
- [Tool\(s\)/method\(s\)](#)
- [Other knowledge resource\(s\)](#) (online portals, policy briefs, training material, multimedia material, technical reports and scientific publications)