



**Food and Agriculture Organization
of the United Nations**

**A SUMMARY TO ASSESS SYNERGIES AND TRADE-OFFS AMONG
THE TWENTY INTERCONNECTED
SUSTAINABLE FOOD AND AGRICULTURE (SFA) ACTIONS
(27 APRIL 2020)**

BACKGROUND

The Evaluation of FAO's Strategic Objective 2 in 2018 noted that "a major challenge for FAO has been the need to acknowledge and explore the full range of potential trade-offs and in some cases contradictions, between sustainability (environmental and social) and productivity¹. In promoting specific approaches to aquaculture, agriculture or forestry solutions, FAO is making implicit judgments about the relative value of these trade-offs, in particular contexts, rather than using its comparative advantage and the opportunities to take a facilitator role, both at global, national and local levels, in engaging stakeholders in exploring these trade-offs and work out jointly crafted solutions". It recommended FAO to 'intensify its efforts in promoting Sustainable Food and Agriculture (SFA) principles within the context of SO2 by taking a step further in formulating clear guidelines that would provide an indication of the types of practices that support implementation of SFA principles, unpacking relevant models and approaches in a detailed and descriptive manner, and addressing integration of cross-cutting issues such as climate'.

¹ This document is based on a longer paper entitled "An Analytical Framework to Assess Synergies and Trade-Offs Among the Twenty Interconnected Sustainable Food and Agriculture (SFA)".

To address the concerns raised, the Organization highlighted the series of measures it was undertaking to promote and support SFA implementation including by developing guidelines for an integrated approach to the series of existing approaches, policies and tools for sustainable agriculture. It elaborated that the guidelines ‘Transforming food and agriculture to achieve the SDGs’ provided a set of 20 interconnected actions (see Annex) to guide decision-makers in policy review, leveraging investments and integrated programmes that follow SFA principles and can support the transformation of the agricultural sector. Furthermore, it proposed to develop an analytical framework that assesses the synergies and trade-offs of the interconnected SFA actions and can promote its use both for policy development and implementation on the ground.

This note presents a preliminary version of this framework and highlights some of the options for future work required to promote the value of applying these methodologies at the country level.

INTRODUCTION

The Sustainable Food and Agriculture (SFA) approach is based on five principles: increasing productivity in food systems; protecting and enhancing natural resources; improving livelihoods; enhancing resilience; and governance. They provide the underpinning for a road map with twenty interconnected actions that can support countries in selecting and prioritizing resources to accelerate the transition towards sustainable approaches. The actions comprise a range of practices, approaches, and tools and rely on participation and partnerships among different actors to accelerate the transition to more sustainable food systems.

It is to be expected that implementing any or all of these actions will trigger tradeoffs and/or synergies that accompany this process as one policy inevitably has an impact on another. For agricultural sectors, these relationships can be assessed from mainly three perspectives including agricultural productivity, environmental impacts and social sustainability, noting that productivity is mainly linked to economic sustainability.

Trade-off analysis in agriculture was developed to evaluate the economic impacts of the introduction of new technologies during the Green Revolution and eventually expanded to

analyze sustainability in agriculture focused on the environmental, economic and health trade-offs associated with pesticide use, coupling economic models with biophysical ones. Over time, the use of trade-off analysis in assessments of agricultural sustainability has become more widespread, addressing environmental and social impacts at sub-national, national and global levels, in addition to agronomic and economic outcomes at farm / production unit level.

The extent to which there will be trade-offs, synergies, between productivity and other sustainability goals in agriculture and between actions aimed to promote them depends on a broad range of factors, including:

- the way actions to boost agricultural productivity are executed and the extent to which good practices are followed, both within the policy design and implementation process and along agricultural supply chains;
- existing pressures on natural resources (including biodiversity) and social sustainability issues in a given country/region;
- the state of the local agricultural sector, the main issues affecting its productivity and sustainability, and the main barriers to sustainable intensification;
- the interaction between agriculture and other economic sectors that may affect the intended outcomes of the 20 actions;
- external shocks;
- existing related policies (e.g. on natural resource management and climate change mitigation and adaptation) and associated plans and actions that may influence the aforementioned outcomes;
- the quality of local governance and institutions and the related enforcement capacity; and
- factors taken into consideration over time (short- vs. long-term) and space (farm vs. landscape).

Any detailed analysis on the ground will rely on data gathering and content specific review of the possible impacts of the interactions while taking into account the ground realities. In addition,

there must be adequate analytical support to ensure context-specific aspects are addressed in measuring the various dimensions of sustainability and developing policy-level decisions. As such, the advantages, the beneficiaries and short- and long-term impacts of applying the analytical approach must also be considered.

A preliminary analytical framework has been developed to assess synergies and trade-offs among the 20 interconnected actions based on a Theory of Change approach. This framework consists of six main steps that will require development of objectives, analysis of context specificities, and development of deliverables.

The framework can be used by countries and sub-national entities during the various stages of the planning and implementation process of their transition to sustainable food and agriculture systems, with a view to maximize synergies and minimize trade-offs between agricultural productivity and sustainability, as well as among related support policies and measures.

Figure 1. The main steps in the evaluation and management of synergies and trade-offs between agricultural productivity and sustainability



As a **first step**, a set of indicators is identified at all relevant scales, i.e. farm/production unit, landscape and national. A number of relevant indicators have been developed in the context of the Sustainable Development Goals (SDGs), including indicator 2.4.1 (“Proportion of agricultural area under productive and sustainable agriculture”), which comprises 11 sub-indicators

addressing a broad range of environmental and socio-economic issues and serves as the de facto internationally recognized definition of sustainable agriculture.

The **second step** involves an assessment and analysis of the status quo of the agricultural sector in the country and of key trends in relation to productivity and other dimensions of sustainability, based on the indicators selected under step 1. The main economic and non-economic barriers to sustainable intensification and the key sustainability issues associated with agricultural supply chains should be identified and analyzed, with a view to unveil areas where policy action is needed the most.

The desired trajectory of the country in terms of agricultural productivity and sustainability is defined in the **third step**, which takes into account the potential synergies and trade-offs between these objectives across different spatial and temporal scales. This trajectory can be set based on national-level objectives, policies and plans in relevant sectors and areas, including as a response to international commitments (e.g. SDGs, NDCs, etc.). All relevant institutions (both national and local) and stakeholders (e.g. agricultural producers, consumers, environmental and social CSOs, and academics) should be actively involved in the dialogue to define the future trajectory of the agricultural sector, so as to ensure policy coherence and minimize potential trade-offs. Once this has been identified, the transition of the agricultural sector from the status quo to its desired future state can be planned, and a suite of locally-appropriate policies and actions/measures to enable this transition and overcome the barriers identified under the previous step can be explored.

Under the **fourth step**, progress towards the desired productivity and sustainability goals in the agricultural sector can then be monitored using the previously identified indicators. Albeit challenging, especially in developing countries, to have sufficient and timely information, data from one or more sources can be used to estimate indicator values, or data can also be extrapolated or synthesized from previous studies. Alternatively, modeling approaches can be used for estimating indicator values. If the necessary data cannot be obtained through either one

of these options, primary data can be collected, or suitable proxies (including of a qualitative nature) can be identified and used, where appropriate.

After the indicators have been measured and their results made available, **step five** is the evaluation of whether the agricultural sector is moving towards – or away from – the desired trajectory in terms of agricultural productivity and sustainability. Furthermore, the relationships between the various indicators can be assessed, and synergies and trade-offs between agricultural productivity and sustainability can be identified and evaluated at various spatial and temporal scales. Stakeholders can then participate in the interpretation of the results.

Under the **sixth and final step** of the framework, the results of step five inform the revision of existing policies and actions/measures – and the design of additional ones - to foster the transition to sustainable food and agriculture systems, with a view to maximize synergies and minimize trade-offs, while ensuring policy coherence. If negative impacts are anticipated, or if progress towards their desired state and/or towards the planned increase in productivity is deemed insufficient, measures and agricultural practices that are known to have a particularly positive effect can be promoted while minimizing potential trade-offs. This is where the 20 actions are particularly relevant in the analysis.

FUTURE WORK

Future work includes the piloting and operationalization of this framework, which is currently underway within the context of the Flexible Multi-Partner Mechanism (FMM) project “Sustainable productivity in agriculture in the context of Climate-Smart Agriculture (CSA) and Agroecology”. As a first step, it is being tested in selected countries with different levels of institutional capacity, so as to be able to gain useful insights into its relevance and practicality in different contexts. The results of the testing can then inform possible revisions and integrations to the framework. Once the latter has been finalized, its implementation at country level can be supported. To this aim, capacity development material will be prepared and trainings carried out for practitioners and decision-makers from developing countries interested in implementing the framework.

More broadly, evidence-based tools and guidance will be developed in order to support policy- and decision-makers (at both national and sub-national levels) and field-level stakeholders (e.g. farmers and extension agents) in the transition to more productive and sustainable agriculture. In particular, tools are needed to carry out local assessment of sustainability in agricultural systems, understand related drivers, synergies and trade-offs, and identify suitable farm interventions that increase productivity and income (especially of the poor) in a sustainable manner. At the same time, guidance will be provided on national and local level policies and incentives to promote these farm interventions and enable the required agricultural sector transformation.

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