European Commission

VCA4D
VALUE CHAIN ANALYSIS FOR DEVELOPMENT

Providing agri-based Value Chain Analysis for improving operations

WHAT? WHY? HOW?

In line with the **Green Deal** and **Farm to Fork Strategy**, the EU is committed to develop agricultural value chains which benefit the poor by taking advantage of the opportunities offered by local and global markets to create decent jobs and value added while protecting the environment.

The '**European Consensus on Development**' adopted by the EU in 2017 highlights inclusive and sustainable growth and jobs as overarching priorities. In this context, sustainable agriculture, fisheries and aquaculture remain key drivers for poverty eradication and the achievement of the Sustainable Development Goals. The EU is also committed to the principles of Development Effectiveness on results, transparency and accountability.

The **European External Investment Plan** provides an integrated financial package to finance investments, based on three pillars: investment funds, technical assistance, and the investment climate and policy environment. The **AgriFI initiative** promotes blended finance to increase investment in smallholder agriculture and micro, small and medium enterprises (MSMEs).

Value chains: a major channel for agricultural development

Value Chains (VCs) are sequences of productive actors that contribute directly to supply specific goods to the domestic and/or export market.

VCs have the capacity to mobilise resources from various economic sectors, create economic value and generate employment. They offer an operational framework for engaging with farmers, businesses and policy makers to improve income generation in an inclusive and sustainable way.

VCA4D responds to the need for quantitative data and evidence-based indicators to inform decision-makers. These elements are often lacking. It provides a detailed assessment of a VC operation and its impact on the main economic, social and environmental dimensions of sustainable development.

VCA4D does not seek to establish a single indicator or a ranking of VCs. It intends to deliver evidence-based analytical content, so as to inform decision-makers and allow them to make their own judgement. The methodology aims at an overall understanding of the VC dynamics (a functional analysis) and at responding to four framing questions (Figure 1).

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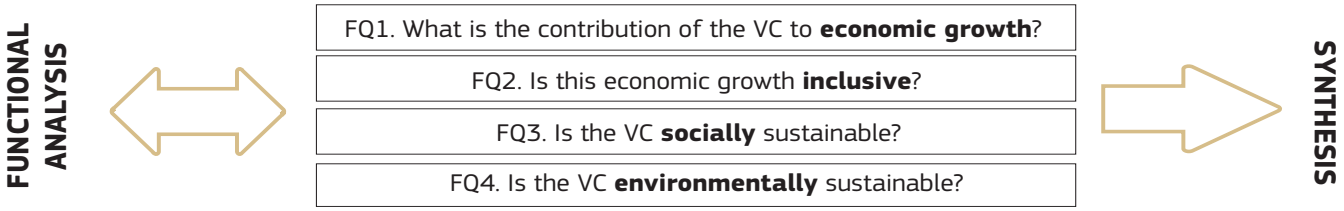
Figure 1: The VCA4D four framing questions



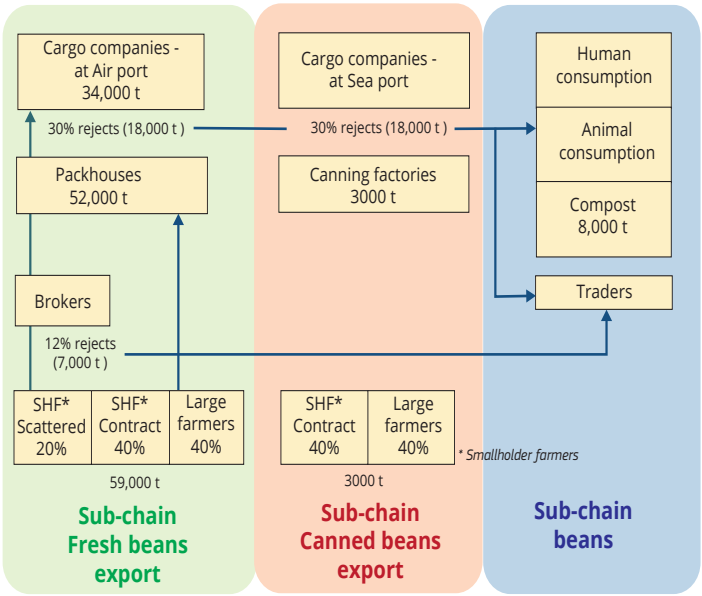
Functional analysis

The functional analysis provides an overall description of the VC system and on how it is organised (actors, governance...) and operates. It encompasses three main areas:

- **Exposing the main features of the value chain**: identifying the key products, actors, functions, the geographical location of activities and operations, as well as the main flows (Figure 2).
- **Reviewing the main technical processes and practises:** main technologies used; technical coefficients and productivity ratios; benchmarking; main known physical and technological constraints and risks.
- **Examining the VC organisation and governance, overall and at every level**: organisations, institutions, coordination schemes, business environment and policy framework.

This helps to define the scope of the analysis, the common typology of actors to be used by all experts, and the sub-chains whose comparison will sharpen the analyses.

Figure 2: Flow chart of a green beans value chain

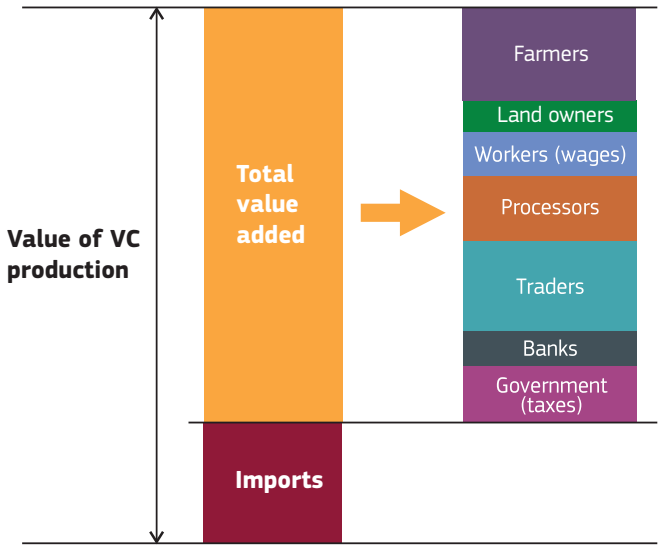


Framing question 1: What is the contribution of the VC to economic growth?

Standard tools of economic analysis are called for to estimate critical indicators for overall domestic growth, production entities performance and national economy. Actual precision depends on data availability, but only robust orders of magnitude are required. Main items expected are:

- **Profitability and sustainability for the VC actors:** net operating profits, return on turnover, benchmarks for farmers' net income, etc.
- **Total effects within the national economy:** total value added (Figure 3) and contribution to the GDP, to the public finances, to the balance of trade, etc.
- **Competitiveness and viability within the international economy**: Nominal Protection Coefficient, Domestic Resource Cost Ratio.

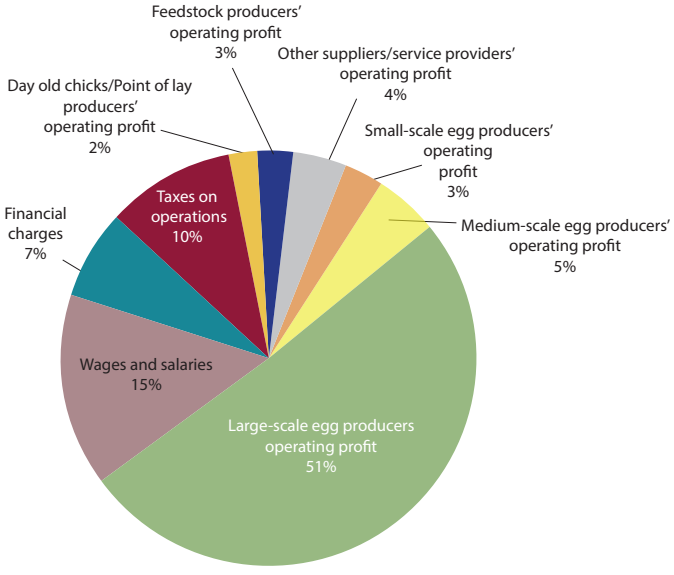
Figure 3: Total value added and components



Framing question 2: Is this economic growth inclusive?

Simple indicators show how growth generated by the VC activities is benefiting the different population groups, businesses and service institutions. This highlights the actual impact of the VC development on poverty alleviation and its potential as a driver for economic development. Main items expected are the **components of the value added** and the distribution of income across actors (Figure 3 & 4), and **job creation** (in number of jobs at the different stages of the VC). The participation of the various stakeholders in the VC governance is also analysed (horizontal and vertical **coordination** and **social capital**).

Figure 4: Distribution of income of an egg value chain



Framing question 3: Is the VC socially sustainable?

A set of questions guides the expert in understanding the main constraints and potential for social sustainability of the VC.
Emphasis is on identifying areas where negative social effects or risks of social difficulties appear, as well as sensitive knowledge-poor areas which should be investigated in greater depth:

Working Conditions: labour rights, child labour, job safety, attractiveness

Land and Water Rights: voluntary guidelines, transparency and consultation, equity and compensation

Gender Equality: participation in the VC, access to resources, decision-making, empowerment, division of labour

Food and Nutrition Security: availability, accessibility, utilisation and nutrition, stability

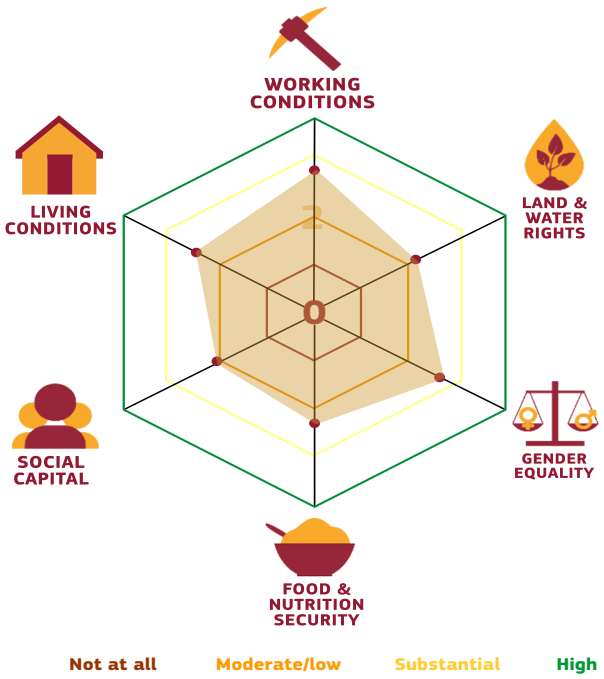
Social Capital: producer organisations, information and trust, social involvement

Living Conditions: health services, housing, education

VCA4D uses a simple "radar" chart which shows the **scores for these six domains** (Figure 5). Over time, the evolution of this diagram helps shed light on changes.

The analysis attempts to discern whether the observed improvements or degradations are related to the VC operations or to the wider societal context.

Figure 5: Social Profile radar chart



Framing question 4: Is the VC environmentally sustainable?

Environmental performance of the VC operations is assessed taking stock of the damage entailed by the VC operations on **Resource depletion**, **Ecosystem quality** and **Human health**, and of their contribution to **Climate Change**, and appraising the risks on **Biodiversity**.

The Life Cycle Assessment (LCA – ISO normed) multi- criteria approach measures resources used and substances emitted throughout all the stages of the VC (Figure 6).

It reviews their impacts on a set of environmental categories, such as water and land use, eutrophication, resource depletion, presence of toxic material and release of carbon equivalent. This then informs on potential damages, risks or benefits for resource depletion, ecosystem quality and human health.

Figure 6: Framework for a Life Cycle Assessment

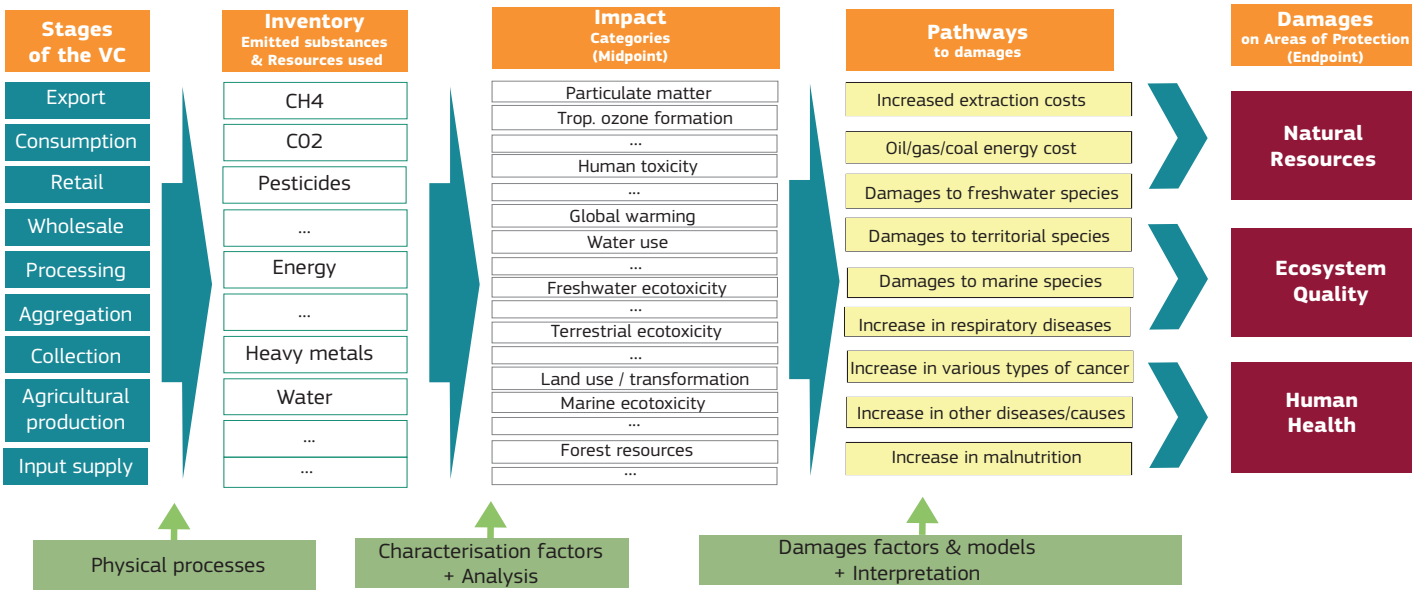


Illustration: main conclusions on a fruit value chain

In **economic** terms, the farming system and location of activities are the main determinants of the profitability and viability for the VC actors. Overall, the VC is competitive thanks to the diversification of processed products. Nevertheless, there is no specific support to the VC, despite the taxes levied being high. The VC balance of trade is negative due to little export and the import of the main intermediate consumptions (e.g. packaging).

The VC economic growth is highly **inclusive**. A large part of incomes is distributed among small producers, artisanal processors and retailers. Women receive 60% of them as operating profits for their businesses or wages. Small-producers' associations are efficient in negotiating farm-gate prices with collectors and wholesalers. Moreover, the VC offers job opportunities in regions where alternative activities are scarce, in particular for youth.

However, the **social sustainability** of the VC is challenged: most small producers do not have land titles, many artisanal processors use techniques harmful to the workforce health, wages in trade sector are lower than the minimum wage. Nevertheless, the sale of fruits during lean seasons provides additional income to buy food supplies.

In **environmental terms**, despite lower yields, organic production has less impact than the conventional one on ecosystem quality and resource depletion. The import of cardboard packaging is an important negative factor on the environmental balance, as well as the losses in the conventional sub-chain due to the transport conditions.

To increase the **overall VC sustainability**, the government and partners should improve road infrastructure, implement the land reform and provide tax incentives for the development of an in-country packaging sector, while the private sector should improve working conditions. Support should also be given to the organic sub-chain, whose prospects for market development are outstanding.

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Synthesis and recommendations

The synthesis of a VC analysis must deliver a clear picture of the VC operations, highlighting the main results and critical points. It encompasses answering the four Framing Questions, to inform on growth, inclusiveness and sustainability of the VC, summing up the main benefits and strengths, pointing at the risks, and identifying the main leverage points for possible action.

The knowledge built on the VC also enables the team of experts to elaborate recommendations for future action. They may encompass changes in organisational rules, technological innovations (known or to be developed), specific supports through information systems, etc. Taking into account the whole VC, they arise from combining the main findings of the functional analysis and of the economic, social and environmental analyses. Concise recommendations and suggestions for improvement are introduced, but not as detailed as in a project identification.

Implementing VCA4D

EU Delegations and partners make requests for value chain analyses to help them invest in value chains and inform policy dialogue. Applying the same methodology to various VC (different countries or different products in the same country) allows lessons to be learnt. EU Delegations may also demand VCA4D assistance on a regular basis (yearly, biennially...).

To carry out this work, INTPA has set up a **partnership with AGRINATURA**, the European Alliance on agricultural knowledge for development that groups more than 30 European universities and research organisations (see http://agrinatura-eu.eu). **For each VC analysis, an interdisciplinary team of 4 experts works in an integrated way and with a collaborative participatory mindset, mixing international and national expertise (economist, social analyst, environmental expert).**

VCA4D implies the use of software for the economic and functional analysis (e.g. AgriFood chain Analysis – AFA), the social analysis (Social Profile) and the LCA analysis (e.g. SimaPro or equivalent). For more information on VCA4D, please check: https://europa.eu/capacity4dev/value-chain-analysis-for-development-vca4d-

VCA4D also builds a database of knowledge on agri-based VCs to draw lessons and guiding principles for relevant interventions and policies.

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For further information: https://ec.europa.eu/international-partnerships/home_en