Knowledge Broker Support Program

Volume 2 – Knowledge Broker Tools – Value Chain Analysis module

The Knowledge Broker Support Program (KBSP) was funded by the Australian Department of Foreign Affairs and Trade, through the Australia Pacific Climate Partnership.

CSIRO Australia's National Science Agency

Citation

Cosijn, M., Meharg, S. Grigg, N., Busilacchi, S., Barbour, E., Nadelko, A., Skewes, T., Hayes, D., Dutra, L.X.C., van Putten, I., Taboada, M.B., Laka, J., Konia, R., Souter, R., Anisi, A., Teava, B., Petsakibo, E., and Butler, J.R.A., 2023, Knowledge Broker Support Program Volume 2 – Knowledge Broker Tools, CSIRO, Canberra, 92 pp.

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Cover photo: Knowledge broker in action. Photo by Tom Greenwood, 2017. Photo below by Seona Meharg.

Value Chain Analysis

In this module, you will learn:

1. **What value chains are, and their importance for people's livelihoods?**
2. **Why undertake a value chain analysis?**
3. **How to map a value chain**
4. **How to analyse the way value chains are impacted by climate change and other drivers of change?**

Mapping a value chain. Image by Sara Busilacchi

What are value chains and why are they important for livelihoods?

Value chains are the range of activities required to bring a product from production or harvest to the final consumers (Kaplinsky and Morris, 2001) and how value is created across the system.

Some value chains are local—think of the cassava grown in the gardens and sold at the local market. Some others are global —as for the mud crabs, which are caught in the mangroves and often exported to international markets.

Usually, activities along the value chain aim to add value to the product as it moves along the chain from producers to consumers. They usually include production, processing, transportation, storage, and consumption.

These value-adding activities are conducted within diverse and complex social networks, which influence how the value chain functions.

The term value chain **'actors'** is often used. It refers to the people or groups of people such as fishers, farmers, middlemen, etc., who are directly involved in the value chain as producers, processors, traders, etc. These actors are linked among themselves through the flow of products, money and information, as you can see in the diagram below.

In addition there are organisations that are part of the enabling environment for value chains. They are involved in the management, monitoring and regulating of the value chains.

Value chains do not work in isolation but are part of larger complicated systems with context-specific socio-ecological, economic, political and cultural characteristics that influence how the value chains work (Bolwig et al., 2010).

As such, two very important factors that have to be considered with value chains are:

1. The **governance structure**, and
2. The **social networks** in which actors are involved, especially the power relationships and trust among actors.

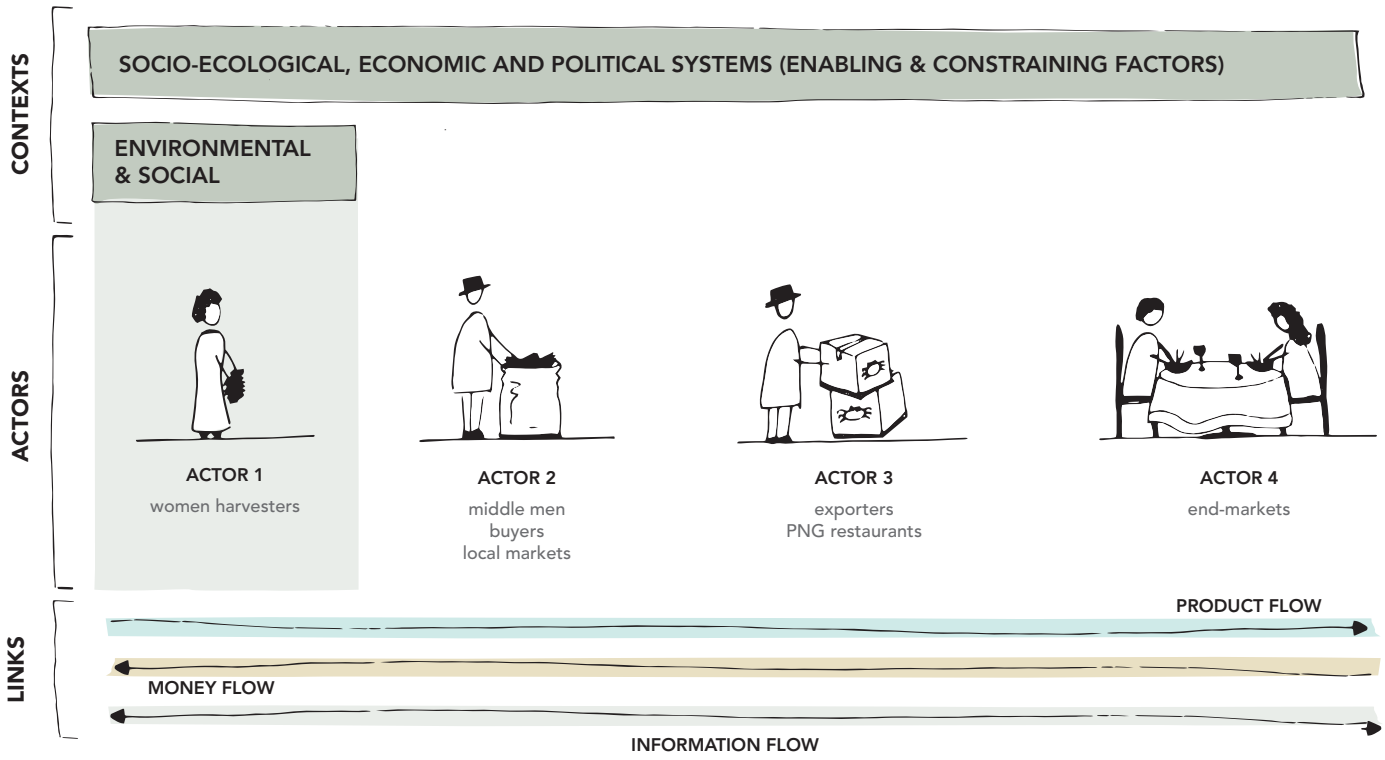


Figure 44 Mapping the value chain. Idea by the KBSP Team. Artwork by Dr Manuela Taboada, Queensland University of Technology

Climate pressures and their impacts on value chains

Value chains are usually resilient to climate change, especially in the short term.

However, extreme and more frequent climate events pose risks that can impact different parts of a value chain. The chart below shows some climate pressures and impacts that they may cause.

Climate pressures

- Changing temperatures
- Changing rainfall
- Extreme weather
- Flooding
- Drought
- Sea level rise

Climate impacts

- Impacts on water and soils
- Impacts on production
- Impacts on storage
- Impacts on movement of goods
- Impacts on infrastructure (roads, shipping, telecommunication, etc.)

Why undertake a Value Chain Analysis

Value chain analysis (VCA) allows for a better understanding of how value is created along the chain for all actors.

When you analyse a value chain, you want to understand how the value chain works and the barriers and constraints actors face, but also opportunities that could help them to improve the operational efficiency and the value chain's resilience.

Value chain analysis is also useful to identify and develop higher-value end markets which can enhance producers' and other actors' livelihoods. Lastly, value chain analysis can be used to understand actors' challenges resulting from drivers of change, including climate, and ways to enhance the value chain's resilience to future risks.

> "You want to also understand how socio-economic, political and cultural issues influence value chains."

You might be particularly interested in the following:

- Governance issues
- What is going on between actors
- What keeps actors together
- What power relations exist
- How relations evolve

The Governance Mapping Tool Module can assist you understand these aspects.

What is Governance Mapping (soccer video):
https://www.youtube.com/watch?v=tLDkOnT2aDk

Tool:
https://www.youtube.com/watch?v=Ui_9bZV9YwE

"You may also want to know what roles specific population groups play in the value chain, such as women, youth, people with disabilities and marginal/ poor households."

All this information is particularly important to know, especially when trying to implement value chain interventions to build their resilience to external drivers of change, as you have seen in the module on the Well-being Impact Model (also known as ADWIM), or to design specific interventions that can increase inclusion and equality for women, youth, people with disabilities and poorer households.

The knowledge co-produced during value chain analysis allows for a better understanding of the way that value is added to a product as it moves from producers to consumers and who adds that value. Through a collaborative and iterative process, a value chain analysis allows you to improve the sustainability of value chains and their resilience to external drivers of change by:

1. Identifying points along the chain where there are constraints, barriers, and opportunities that can be addressed.
2. Identifying the decision-making process when scoping for new markets and developing value-adding activities such as better processing of products.
3. Understanding the behavioural drivers, means understanding why people do things as they do.
4. Identifying higher value end markets and how to connect to them, would enhance the economic gain of actors, especially producers.
5. Understanding the impacts that drivers of change, including climate, can have on the activities and products along the value chains to future-proof the operations against associated risks.

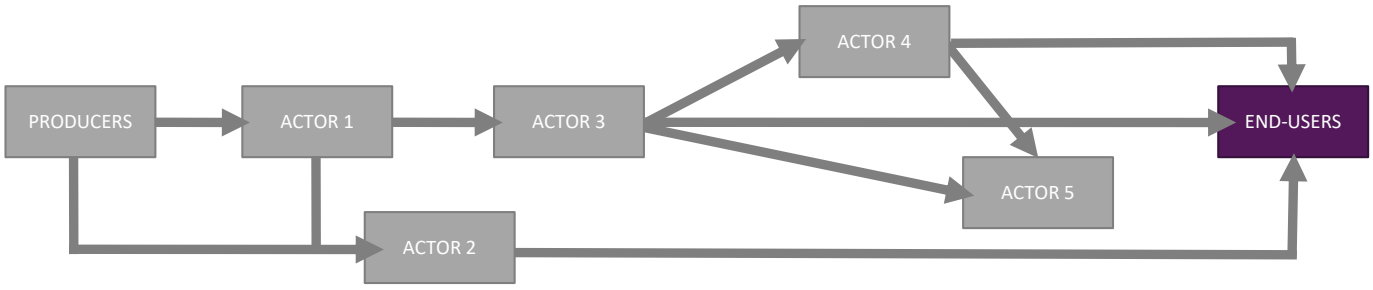


Figure 45 Generic Value Chain Mapping

Value Chain Mapping is the process that creates a visual diagram of the value chain using data and information about the horizontal and vertical dimensions of the value chain.

Value chain analysis is a process for understanding the components in a value chain and the system in which it operates to add value to the product (stepping up) and build the resilience and sustainability of the chain. It is also used for identifying new end-market opportunities (stepping out). As a Knowledge Broker, you should decide how to adapt the process to the context, project objectives and available resources. As new information is available, you should continuously revise the methodology and iteratively co-design market-based solutions.

Value chain mapping is an effective analysis process that creates a visual diagram of the value chain using data and information on the horizontal and vertical dimensions of the value chain.

Step 1: The Vertical Dimension

The vertical dimension of a value chain includes all the components of the value chain itself:

- actors involved
- value-adding activities
- the flow of money and information
- points of economic gain or loss

Step 2: The Horizontal Dimension

The horizontal dimension of a value chain includes all the system components in which the value chain operates (that is, the context in which the value chain operates). These include:

- governance structures
- dynamics amongst actors
- power relations
- roles of specific population groups

Data collected during value chain mapping also allows an understanding of **constraints, barriers, and opportunities to build the resilience and sustainability** of value chains. This information includes information on the impact of climate change and other drivers of change on value chains.

The data needed to map the value chain is usually collected using different methods (i.e. **mixed-method approaches**). Methods commonly used are: secondary data research, individual interviews, key informant interviews, focus groups, workshops and participatory chain mapping. These methods are used to collect different types of information and vary according to the context and different groups of people.

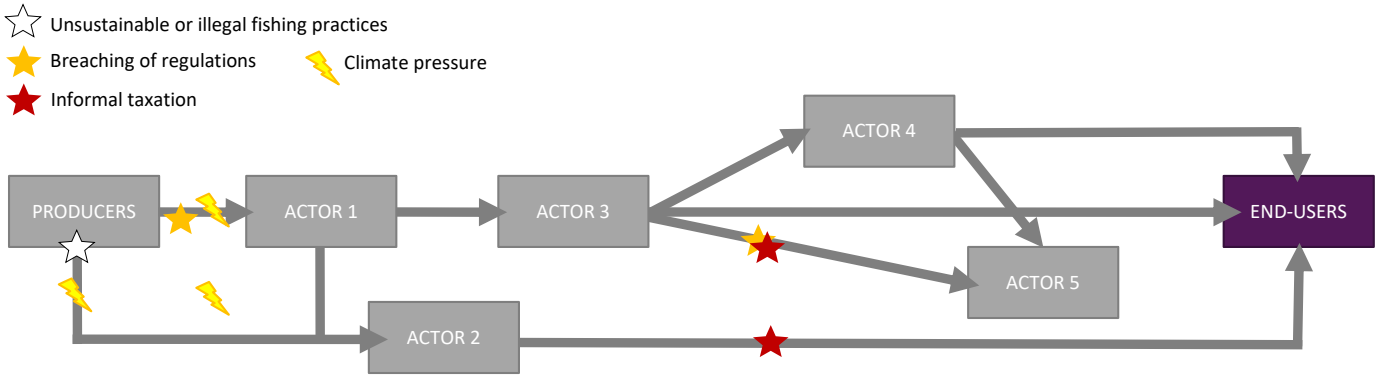


Figure 46 Generic Value Chain Mapping, including barriers and constraints

MIXED METHODS APPROACHES

For the majority of tools, data will need to be collected to inform the understanding of the system and to support the decision-making process. It is usually collected using different methods (i.e. mixed methods approaches). It includes collecting two types of data.

Quantitative data is information on quantities that can be measured and expressed in numbers and displayed through graphs, charts etc.

Qualitative data is information that cannot easily be measured, but that can tell a story. Quantitative and qualitative data can be directly collected. This is called primary data. This can be done through:

- individual interviews
- key informant interviews
- focus group discussions
- surveys

These methods are used to collect different types of information and vary according to the context and different groups of people.

You can also use data that has been previously collected and analysed by others. This is called secondary data. Secondary data is collected through literature reviews, reports, internet searches as well as government and business statistics.

Note: when collecting primary data think about who you are involving in doing interviews as well as participating in the interviews. Stop and think *"Are the people participating representative of the people in my system?"*. If you do not do this, you will get information that is not complete.

When using secondary data ensure the source is reputable and not biased. It is always good to cross check if you are unsure and look for additional sources of information.

Remember, you need to triangulate and verify the information you collect with different actors and any secondary data you have.

End market analysis:

- allows producers to explore higher-value end markets and make informed decisions on how to access those end markets that offer the greatest benefits.
- requires expert knowledge, and if you want to add it to your analysis, you should recognise when to seek additional support. If the expertise is not available within your organisation you should seek it externally.

How to map a value chain

If you are interested in undertaking a value chain analysis for your project, below is a brief description of 'How To' with the steps you should follow.

Remember that this is a general guideline, and you should adapt the tool to your project, needs, resources and team capabilities.

There are four key steps in mapping a value chain to generate interventions. Value chain maps are created during the first three steps. The fourth step identifies the root causes of barriers and constraints, and interventions are agreed upon.

- **STEP 1: The vertical dimension**
- **STEP 2: The horizontal dimension**
- **STEP 3: Using the template to visualise map**
- **STEP 4: Identifying root causes and finding solutions**

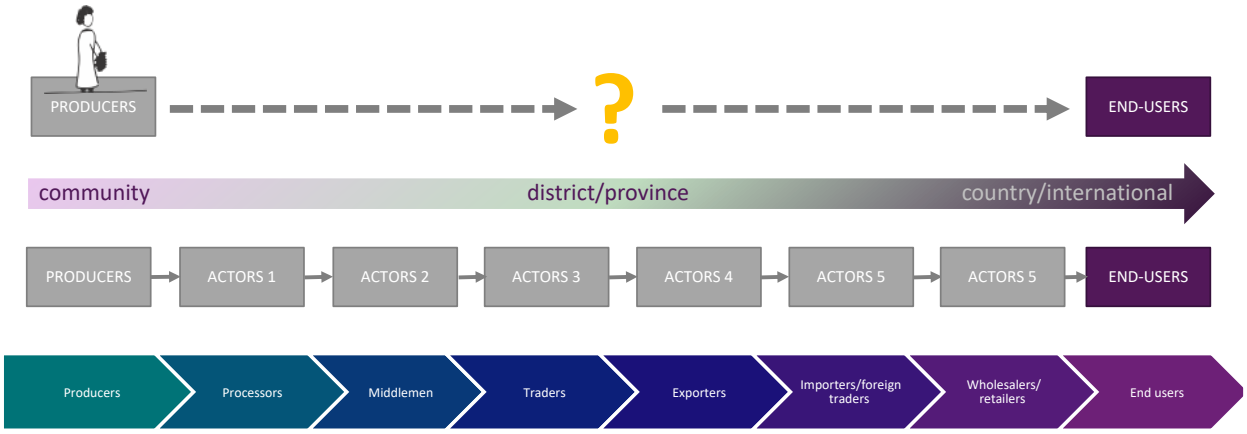


Figure 47 Gather data on the components

STEP 1: The vertical dimension

The first step is to gather data on the components of the vertical dimension.

This includes:

1. Identifying the groups of actors involved in the value chain. Depending on the complexity of the value chain and whether the products are traded locally or domestically, or they are also exported overseas, actors can include producers, processors, middlemen, traders, exporters and importers, wholesalers and end-consumers. You should be able to identify each of these groups when undertaking interviews or surveys.
2. Understanding the value-adding activities conducted by each group of actors (e.g. fish processing adds value to fish).
3. Understanding the costs and expenses incurred by each group of actors.
4. Identifying actors' perceptions of climate change impacts on all the value chain activities.

METHODS USED

Individual interviews are usually used to collect these data from each group of actors along the value chain. Quantitative data is mainly collected. Usually, the first actors to be interviewed are the producers, who can be identified by the community leaders or by talking to other actors to be interviewed. From there, the other actors to interview are identified through snowball sampling in which people interviewed provide referrals to recruit other actors to interview.

Note: In some cases you can also start with other actors and work backwards and forwards to interview all value chain actors.

Remember, you need to triangulate / verify the information you collect with different actors as well as with any secondary data you have.

Tip: When talking to actors ask them questions about changes they have noticed in the way they are conducting the activities which can be related to changes due to climate impacts such as more frequent flooding, sea-level-rise etc. This is used later in discussion in workshops about climate impacts.

STEP 2: The horizontal dimension, including the impacts of climate change

The second step is to gather data on the components of the horizontal dimension. This means that you should collect data that allows you to understand:

- the power relations among actors and between actors and other stakeholders;
- the governance structure and decision-making processes in which the value chain operates (see the module on Governance Mapping for how to undertake governance mapping);
- the socio-economic context in which actors live, especially for producers who are often the focus of our interventions;
- the barriers and constraints faced by actors (e.g. regulations); and
- opportunities actors may have (e.g. new markets, new production techniques, etc.).

Apart from identifying stakeholder perceptions on climate change impacts on all the value chain activities, this step is important to understand the adaptive capacity of the actors, especially the ones that are a focus of your projects.

When mapping the horizontal dimension, you want to understand how the existing socio-economic and political system prevents the actors from adapting to the changing conditions. You also want to identify opportunities to build on existing relations and activities.

Focus groups

Collecting data

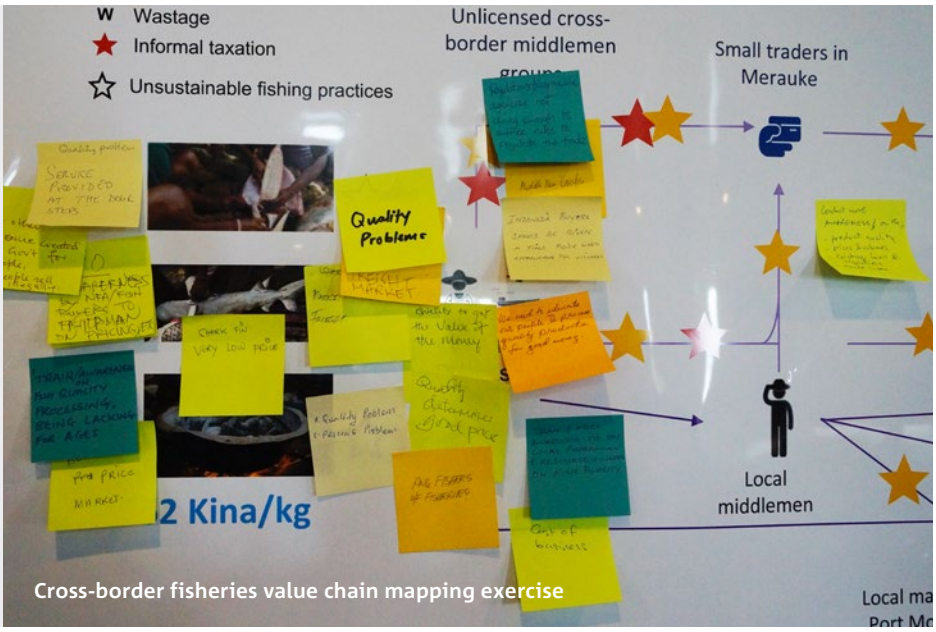
METHODS USED

Key informant interviews are usually used to collect these data from stakeholders who have knowledge of the value chain but are not directly involved, such as local or government officers who are in charge of regulating the operations connected with the production and trade of the products. These stakeholders are well-informed on the issues and structure of the value chains, even if they are not directly involved in the value chain activities. A question guide can be used in which a list of open-ended questions is prepared to help direct the discussion with the key informants.

Focus groups are usually conducted to have a more in-depth understanding of the value chains and with specific community groups such as women, youth, fishers, etc. This method is generally used to follow up on and validate information collected with the other methods, such as possible issues and strengths in existing value chains, new market possibilities and ideas and potential incentives for change.

EXAMPLE: CROSS-BORDER FISHERIES VALUE CHAIN IN PNG AND INDONESIA

The image below is an example of a cross-border fisheries value chain mapping exercise between PNG and Indonesia. It shows the complexity of the value chain system with the variety of actors from local to international, as well as the challenges. Based on this map, stakeholders have been able to identify a number of solutions to increase the resilience of the value chain.



Cross-border fisheries value chain mapping exercise

STEP 3: Using the template to visualise map

Using the data collected in the previous two steps prepares the value chain map. Below is an example from Papua New Guinean of a local fisheries value chain where product was traded into Indonesia and then international markets mapped by CSIRO.

In the example shown in Fig 48, the value chain map identified the actors along the value chain, the value-adding activities taking place along the chain, and the flow of money along with the legislative framework around the value chain.

Characteristics of the socio-ecological, economic and political systems were also identified. The map, which is a visual representation of the value chain, is usually accompanied by statistical analysis of the quantitative data, such as prices and quantities, and a narrative inferred from the qualitative data collected.

Download the template below to create your own value chain map. https://learnwithacfid.com/pluginfile.php/7556/mod_scorm/content/14/scormcontent/assets/ukcBzsNuHs7toCBg_cI4SrH5jTn7UUCtp-ValueChainAnalysisTemplate.pptx

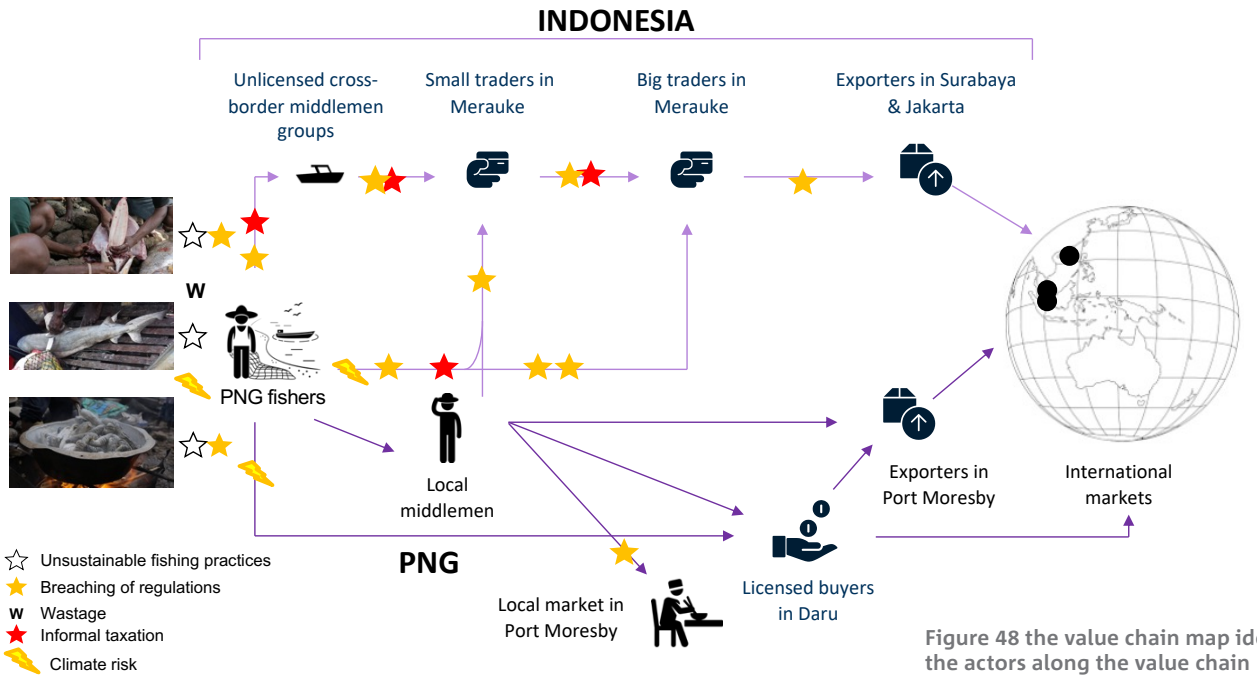


Figure 48 the value chain map identified the actors along the value chain

STEP 4: Identifying root causes and finding solutions

This step seeks to understand the root causes of barriers and constraints, including those that weaken the adaptive capacity of target actors, and agree on solutions to build the resilience and sustainability of value chains.

This step is usually conducted during a participatory multi-stakeholder workshop, which brings together representatives of the various value chain actors, groups and other relevant stakeholders. Experts with specialised knowledge on climate change and other drivers of change can be invited to present scientific data about these drivers.

If you would like to watch a video on how to do Value chain analysis please go to https://www.youtube.com/playlist?list=PLa3eWR75XNLy4JnkcKHJKnsuAcnNe1-SQ

METHODS USED

Participatory multi-stakeholder workshop including representatives from various groups, experts, leadership representatives and other relevant stakeholders.

During the workshop, a Causal Loop Analysis (see causal loop module). To learn how to undertake this, visit the module on Casual Loop Analysis: https://learnwithacfid.com/mod/page/view.php?id=645

Case study 1: Mangoro Market Meri

The Mangoro Market Meri project is being implemented by The Nature Conservancy (TNC). Women are developing mechanisms to effectively and sustainably manage their mangroves and nearshore fisheries, aiming to reduce or eliminate over-fishing and over-harvesting.

As part of the project, TNC and CSIRO mapped the mud crab value chain with the value chain actors.

Watch Mangoro Market Meri case study video here: https://youtu.be/KxN5zxGqoow

You can learn more about Mangoro Market Meri via https://www.nature.org/en-us/about-us/where-we-work/asia-pacific/asia-and-the-pacific-women-in-conservation/women-guardians-of-the-mangroves/

Photo by Ruth Konia, TNC

Case study 2: OK Tedi Development Foundation

Women in the Fly River, Papua New Guinea, with the support of the Ok Tedi Development Foundation (OTDF), want to explore new or improved markets for fisheries products important for their livelihoods.

OTDF has been working with CSIRO to map tilapia and mud crabs value chains in the Fly River to identify interventions to improve livelihoods.

Watch Ok Tedi Development Foundation case study video here: https://youtu.be/D83BeyOuFW4

Read more about the OTDF exploration via the project overview by the Australia Centre for International Agricultural Research here: https://www.aciar.gov.au/project/fis-2020-110

Photo by Josephine Laka

Skills and competencies needed for undertaking a Value Chain Analysis

As a Knowledge Broker undertaking a value chain analysis, you will deal with the complicated decisions faced across the value chain, which require all of the competencies.

In this role, you and your team should bring together diverse knowledges from value chain actors and decision-makers with different expertise and backgrounds to co-produce new knowledge to integrate into decision-making. This co-produced knowledge is context-specific as it is produced through an iterative and collaborative process that engages actors who have knowledge of the system. The iterative, collaborative and contextualised nature of the process helps to increase the resilience and sustainability of the value chain.

You and your team will also need to be open to the multiple stakeholders across the chain and deal with ambiguity, especially with data uncertainty and the absence of knowledge and data. This will help you to better understand the various challenges and risks.

As already discussed, value chains are by their very nature complicated systems, so you will need systems thinking capabilities.

You and your team will need to apply strategic and future thinking to help value chain actors plan and ensure they have a clear understanding of the goals, who is doing what and when they are doing it, while imagining a more sustainable and resilient future.

References and additional resources

If you would like to watch a YouTube video on this module, please see https://www.youtube.com/playlist?list=PLa3eWR75XNLy4JnkcKHJKnsuAcnNe1-SQ

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Acknowledgements

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