

Product Value Chains: A Systems View of Innovation Impact Pathways

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What is a Value Chain?

A value chain is the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use (Kaplinsky and Morris, 2002).

It differs from a Supply Chain

The value chain begins with what value the customer receives to be willing to pay for the product, and that payment works its way back to the producer (Feller et.al., 2006).

Value is added at each step, and value is captured in the interface at each step (business-to-business as well as business to consumer), not linearly but rather within a system.

Value added can be social and environmental, as well as economic.

Actors in a Value Chain

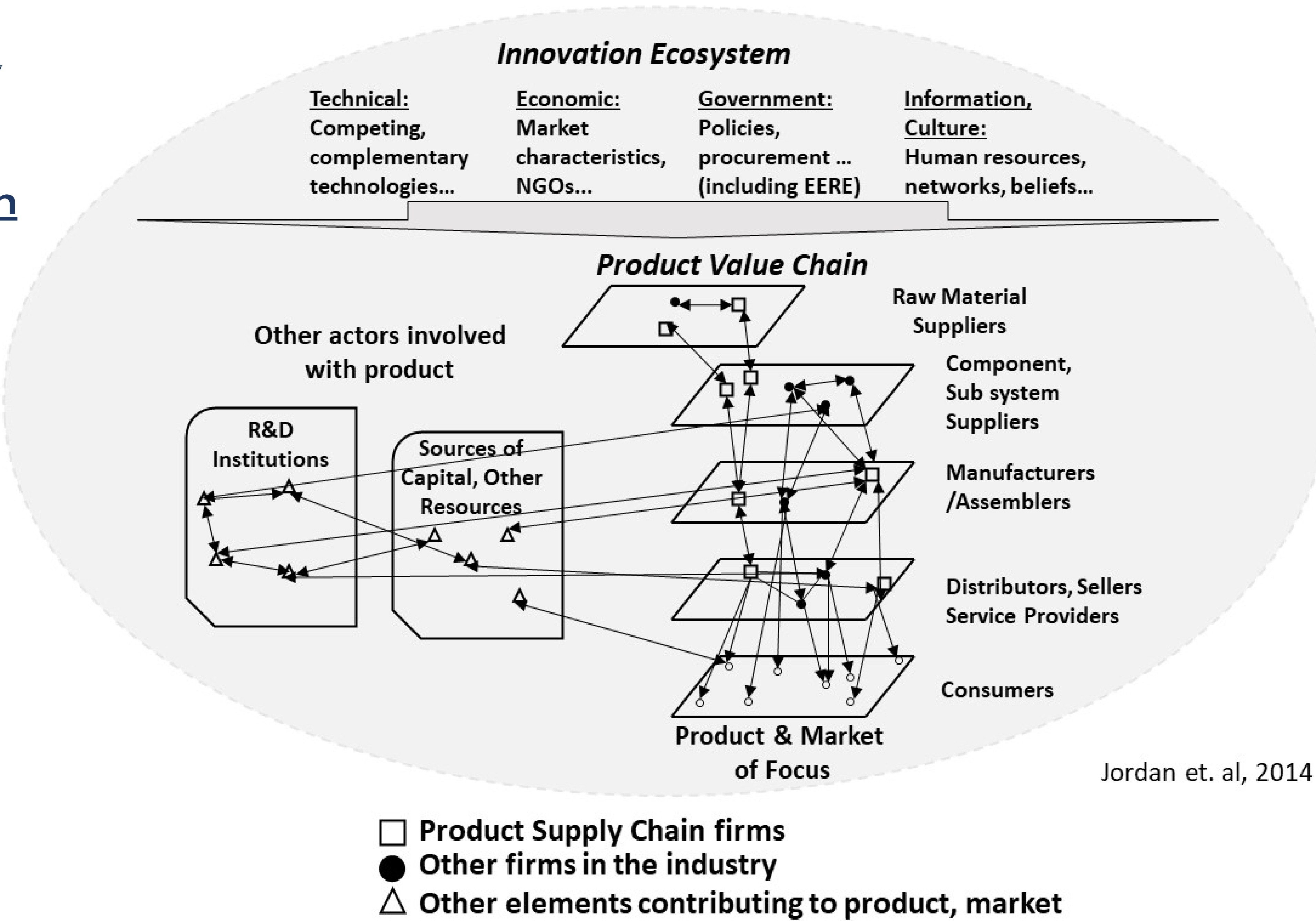
Market actors for a product:

- Raw material suppliers
- Component, Sub-system suppliers
- Manufacturers/Assemblers
- Distributors/Sellers/Service suppliers
- Consumers, and for public goods the public in general

Supporting actors for a product:

- R&D Institutions
- Business infrastructure & functions
- Sources of capital/finance
- Government entities (taxes & subsidies/regulation, procurement)

A Product Value Chain and Innovation Ecosystem



Jordan et. al, 2014

Why is Value Chain Analysis helpful for Innovation Impact Evaluation?

The complexity of assessing, either prospectively or after-the-fact, the complex changes that happen leading up to the introduction and adoption of an innovation is considerable.

A good understanding of a product (or policy, process, or practice) value chain illuminates the points in system where interventions are needed to foster an innovation, the pathways to look for when measuring progress and impact, and the many other contributors to the innovation.

Major Evaluation Question

For a specific technology and market, what is the evidence from value chain analysis of the product (process) innovation adding value along the product value chain and where has there been progress and impact?

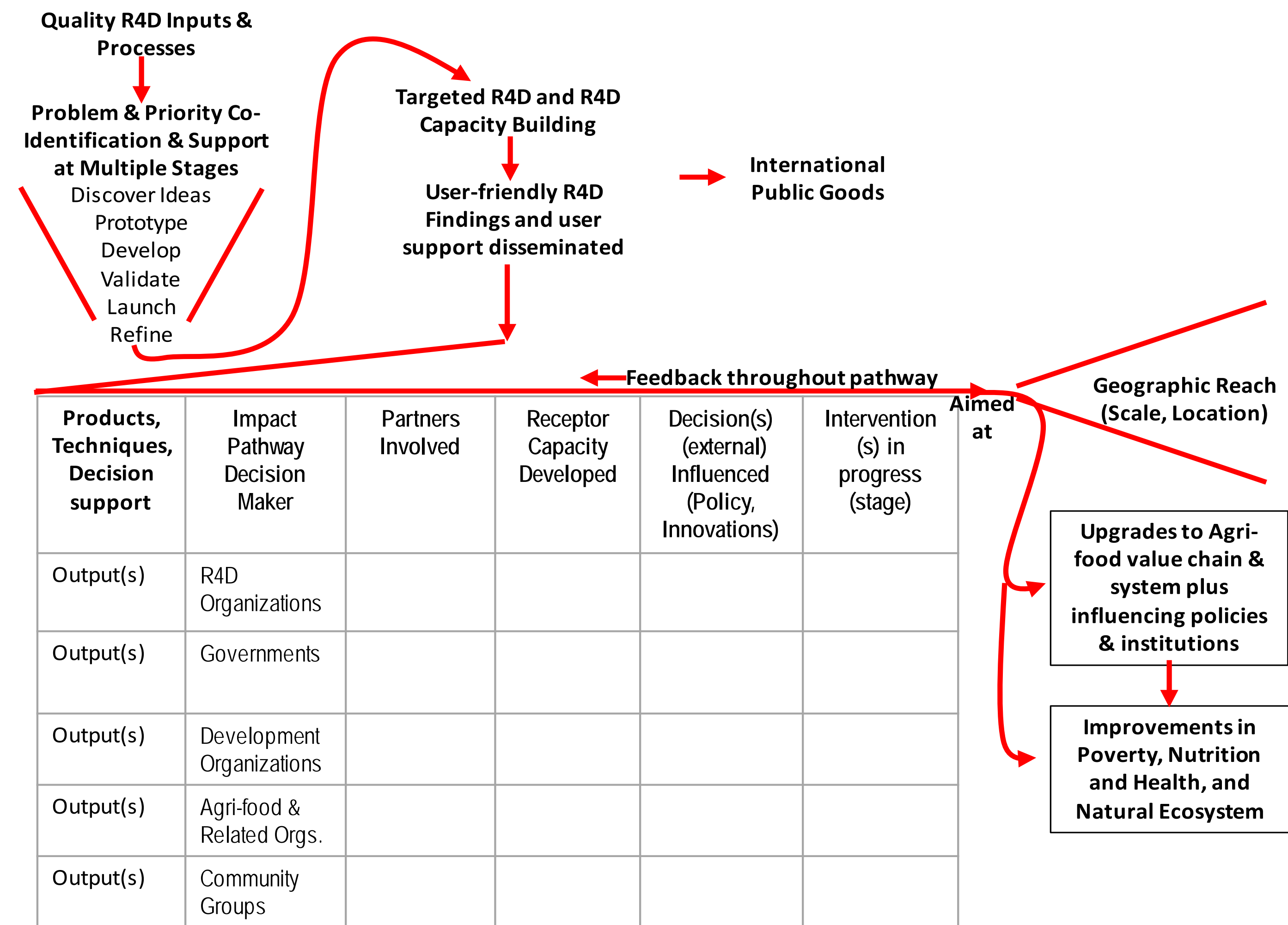
Assumptions to Investigate

- The larger the extent of the chain in place, the closer the technology is to commercialization and sales and the more likely commercialization and market adoption will occur. Identified gaps are opportunities for future efforts.
- The larger the extent of planned and actual value-adding changes in relationships among actors in the chain, along with their importance to commercialization and adoption the better. Identified gaps are opportunities for future efforts.
- The larger are projections of the future extent and strength and value added of the product value chain, including more formal partnerships with longer duration, and the credibility and likelihood of these estimates, the better. Identified gaps are opportunities for future efforts.

Research for Development (R4D)

Impact Pathways:

Map for Data Collection and Analysis



Methods

The Impact Pathways Framework shown here can help with data collection and analysis, using a historical tracing approach (Jordan 2019). This type of research for development (R4D) has used value chain analysis in planning for more than 20 years (for example, Gelli et.al, 2015).

This is a linear view of a very non-linear process. It shows potential next stage users of research participate in decision making and research that is focused on capacity building in value chain actors as well as technology development. It shows multiple possible outputs and the various types of entities and partners that move those early outcomes to pilot interventions aimed at eventually (in this example) changing agri-food system value chains or factors that influence them.

The data most likely will come from project reports and surveys of grantees, as well as industry/market analysis if this has been done. Helpful data to be collected routinely from grantees includes technology or process name, intended application(s), existing or desired partnerships (formal and informal) with firms/entities in the actual or hypothesized supply chain, value propositions of each project effort, Technology Readiness Levels, actual or projected date of commercial launch. Standardization of definitions, assumptions, and data collection and analysis protocols is necessary when applying this method to multiple technologies and markets. This allows for aggregation, and maintains the credibility of analysis results.

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