# Research methods for value chain analysis

**Ben Belton**

Michigan State University

# Value chain research objectives

Generate policy-relevant information on:

- **Structure** – Actor type, number, size, geographical location degree of concentration, Social identity, Degree of concentration (or dispersion) in ownership of assets and market share
- **Conduct** – economic behavior, technological choices as actors acquire inputs, 'make' something with them, and sell the outputs
- **Performance** – how well a whole value chain, or a value chain segment, or a set of value chain actors, performs – e.g. in terms of: efficiency; inclusiveness working conditions; environmental sustainability; Food safety; product quality

- **<u>Changes</u> taking place in SCP over time**
- Identify options for policy and investment that reflect the situation on the ground

# How to think about VC actor conduct

All value chain actors transform **inputs** into **outputs** (goods or services) using **assets** and labor. These become inputs when used by other actors further 'downstream' in the value chain.

For example:

- Farmers use land, machines (assets), fertilizer, seed, fuel (inputs) and labor, to 'make' cassava (output). Farmers sell crops to traders or processors, who use it as an input for their businesses.

- Processors use land, buildings, machines (assets), cassava, packaging, fuel, and labor, to make an output (e.g. cassava chips). They sell the output to traders, or processors, who use it as an input for their own businesses

- Behavior of actors in each segment of the chain can be summarized as: **Assets**, **Buy**, **Make**, **Sell**

- All segments linked by logistics – transport services and storage

# Agri-food value chain segments and functions

| Segment | Actor | Assets | Inputs (Buy) | Making | Outputs (Sell) | Notes |
|---------|-------|--------|--------------|--------|----------------|-------|
| **Upstream** | Farmer | Land, Machinery Draft animals, | Seed, Fertilizer, pesticides, Labor, Credit | Growing crops | Crops | May employ family or hired labor, may use credit |
| **Midstream** | Traders | Capital, Warehouses, Shops, Vehicles | Crops (from farmers or other traders), Packaging, Labor, Credit | Aggregating Repacking, Grading, Distribution | Crops | Many different types of trader – e.g. 'collectors'; 'wholesalers'; 'brokers'. Traders may be consumers or providers of credit |
| **Midstream** | Processors (e.g. mills, feed factories) | Land, Buildings, Machinery, Vehicles | Crops, Packaging Fuel, Labor, Credit | Sorting, Milling, Packaging, Marketing, Distribution | Oil, Flour, Feeds, Other processed foods | Often use hired labor. May be consumers or providers of credit |
| **Downstream** | Retailers | Shops, Vehicles | Crops and processed goods from traders & processors, Labor, Credit | Sourcing, Distribution | Crops, processed goods | Many types, from 'traditional' retailers in wet markets and mobile 'hawkers' to 'modern' retail – e.g. supermarkets, online |

*(Logistics — spanning Upstream through Downstream)*
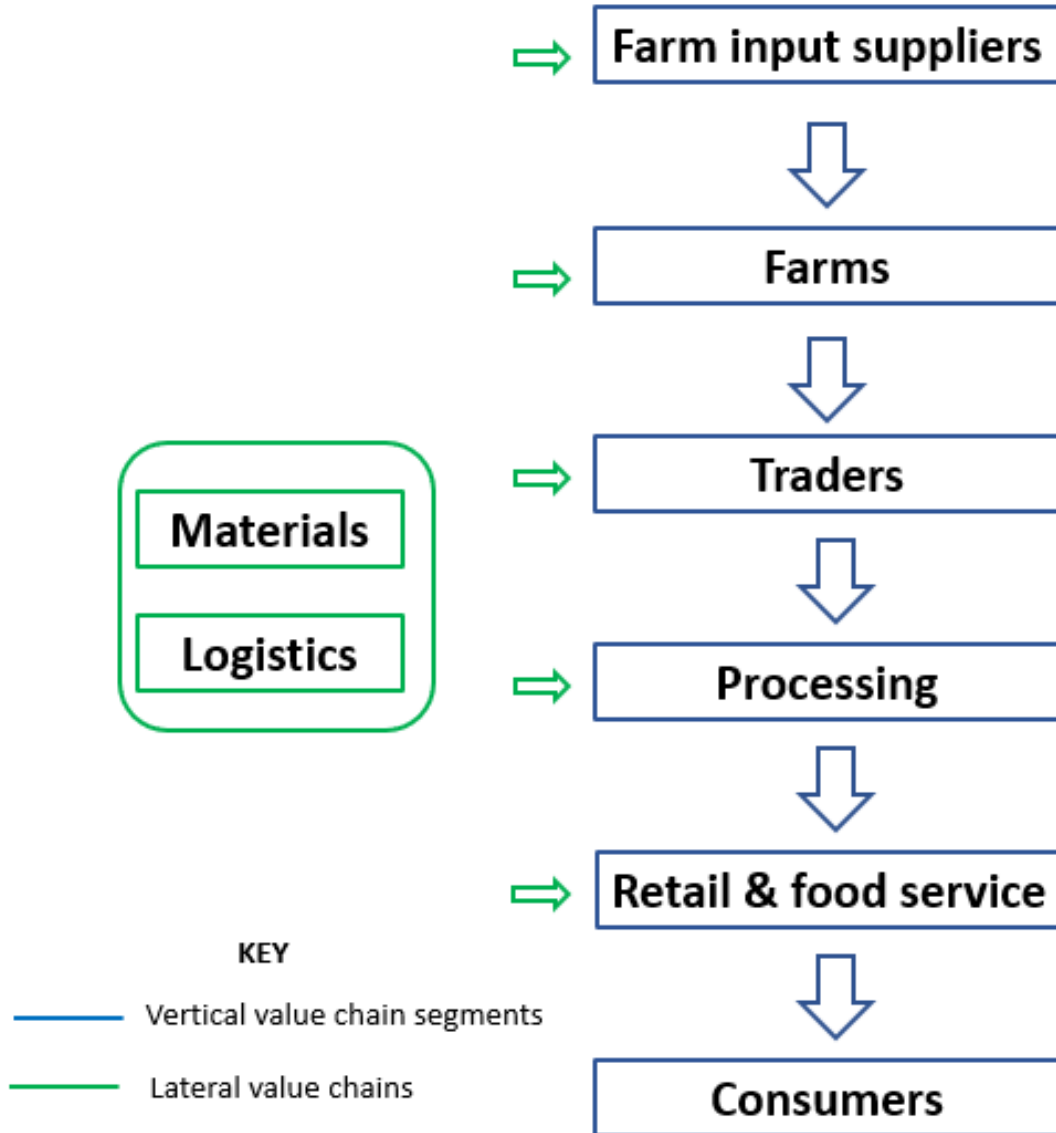
# Social dimensions

Pay close attention to: **"who"** is involved (e.g., gender, ethnicity, age, place of origin, worker/owner, family/hired labor)

**Who has what?** - e.g., land, machines, credit, education, status

**Who does what?** - e.g., paid/unpaid work, business operation

**Who gets what?** - e.g., wages, payment in kind, profit, interest

**What do they do with it?** – e.g., use for day-to-day survival, for expanding business, to buy assets

Change over time (**now; 5 years ago; 10 years ago**)

# Scoping research

- Intensive qualitative research: Keep asking the questions to new informants until 'saturation' (no new information emerging).

- Interviews: key informant, opportunistic, snowballing, but include wide range of locations, actors and perspectives.

- Open-ended, semi-structured interviews (using checklist of questions as guide) with actors: Assets, Buy, Make, Sell; Who has/does/gets what & what do they do with it

- Understanding how people think – e.g. units, timing, terminology.

- Collection of data that will help design sample frame (e.g., member lists for markets, associations, satellite images).

- Keep an open mind; Think critically; Triangulate

## *Assets - who has what/who does what/what do they do with it?*

- Human capital – education, age, ethnicity, gender etc
- When did you establish this business? What did you do before that? Where did you get capital needed to set up this business?
- Is the business a family firm? If so, in what capacity are other family members involved?
- Do you or other family members have any other businesses related to this one. If so, in what order did you establish them and why?
- Do you have any businesses unrelated to this one? What are they?
- Do you have any agricultural land? How much
- Do you own any vehicles used for this business? Give details
- Do you own any land or buildings used for this business? Give details
- Do you pay any rent or other fees for the land or buildings used to operate your business? Give details

# *Buy - who does what?*

- During which months does this business operate? Which are peak/low months?
- What are the most important products that you trade?
- How much of each of the main products/species do you procure on average in one month during high season, and during low season? How about 5, 10 years ago? Why has this changed?
- What are the main locations & type of suppliers that you source each of these species/products from? How about 5, 10 years ago? Why has this changed?
- How do you usually procure these products (e.g. buy at auction, make agreement over phone, advance contract)?
- How are they transported?
- Do you provide credit to any of your suppliers? Which suppliers? How common is this (e.g. how many of each type of supplier do you provide credit too?)
- What are the terms of the credit you provide (e.g. amount, duration, interest, requirement to sell to you)?

# Make - who does what/who gets what?

- How do you earn an income from trading – e.g. by buying and selling, or by taking a commission for organizing sales?
- How long does traded products usually remain in your possession?
- Do you grade, clean or store the products you trade? Do you experience any product losses during handling/storage? Why/how much?
- How many male and female workers do you employ (permanent and temporary)? What are their roles? How many of the workers in this business are family members (if any)? How are workers paid (e.g. daily, monthly, piece rate)? How much are they paid?
- Would you categorize your trading business as small, medium or large? Why?
- In the past 12 months, did you borrow money to operate/invest in this business? From what sources, on what terms?
- Are you a member of any business association? Which and why?; Does the association mediate disputes? Can you give an example?

# *Sell - who does what/who gets what?*

- Which months are high/low season for sales? How much of each of the main products/species do you sell on average in one month during high season, and during low season? How about 5, 10 years ago?
- What are the main locations (markets/areas) that you sell each of the main products to?
- What type of customers do you usually supply to (e.g. traders in other wholesale markets market, local retailers etc.)? What % of the product you trade is sold to each type of customer?
- How do you usually organize sales to customers (e.g. sell at auction, make agreement over phone, advance contract)?
- Do you provide credit to any of your customers? How common is this (e.g. what % of each type of supplier do you provide credit too?); What are the terms of the credit you provide (e.g. value, form, duration, interest, requirement to buy from you)?
- Do your customers usually collect product from you, or do you deliver to them? Do you deliver using own or rented vehicles? What type of vehicles? From whom do you rent?

# Scoping research

Provides:

1) Strong qualitative understanding of how VC is organized and operates (*can also be a complete piece of qualitative research*)

2) Inform the choice of research questions for structured surveys

3) Support design of questionnaire based on hypotheses

4) Context for interpreting quantitative results

5) Information that allows for choices to be made about what to include or exclude from survey

6) Enable design of a structured questionnaire that respondents can understand, and that will generate accurate responses

**More scoping → better research questions → better questionnaire design + better data + better data interpretation**

# Quantitative data collection (sample design)

- Aiming to collect data that is statistically representative of a population, usually by sampling a subset
  - ➤ (e.g. rural households in a particular area, traders in certain markets)
- Need to have information on the size of the target population (sample frame) to draw a statistically representative sample
- Need to make decisions about what to include/exclude based on objectives of survey, sample frame, limitations of budget/time

# Questionnaire structure - examples

**COVER PAGE**
No sub-sections, No rosters, No questions, Static texts: 1.

**A. IDENTIFICATION**
No sub-sections, No rosters, Questions: 17.

**B. INTERVIEWEE DETAILS**
No sub-sections, No rosters, Questions: 31.

**C. BUSINESS DETAILS**
No sub-sections, No rosters, Questions: 57, Static texts: 3.

**D. MILLING EQUIPMENT**
No sub-sections, Rosters: 4, Questions: 98, Static texts: 1, Variables: 1.

**E. INPUTS**
Sub-sections: 9, Rosters: 4, Questions: 269, Static texts: 1, Variables: 24.

**F. MILLING**
Sub-sections: 1, No rosters, Questions: 67, Static texts: 6, Variables: 12.

**G. MARKETING**
Sub-sections: 4, Rosters: 4, Questions: 244, Static texts: 16, Variables: 28.

**H. END OF INTERVIEW**
No sub-sections, No rosters, Questions: 1.

Oil milling survey questionnaire contents page

- Assets
- Buy
- Make
- Sell

Maize trader questionnaire contents (partial)

**SURVEY IDENTIFICATION INFORMATION**
**QUESTIONNAIRE DESCRIPTION**

**COVER PAGE**
No sub-sections, No rosters, Questions: 11, Static texts: 3.

**A. INTERVIEW DETAILS**
No sub-sections, No rosters, Questions: 11, Variables: 1.

**B1. BUSINESS TYPE**
No sub-sections, No rosters, Questions: 36.

**B2. BUSINESS ACTIVITIES**
No sub-sections, Rosters: 1, Questions: 31, Static texts: 2.

**C. BUSINESS INVENTORY**
No sub-sections, No rosters, Questions: 18, Static texts: 1.

**D1. BUYING MAIZE 2017/18**
No sub-sections, No rosters, Questions: 20, Static texts: 14, Variables: 19.

**D2. BUYING MAIZE 2017/18**
Sub-sections: 3, No rosters, Questions: 22, Static texts: 2, Variables: 1.

**E1. HANDLING MAIZE**
No sub-sections, Rosters: 1, Questions: 4.

**E2. GRADING MAIZE (2017/18)**
No sub-sections, No rosters, Questions: 5, Static texts: 1.

**E3. HANDLING MAIZE (CONTINUED.)**
No sub-sections, No rosters, Questions: 10.

**F. SELLING MAIZE 2017-18**
No sub-sections, Rosters: 1, Questions: 27, Static texts: 2, Variables: 2.

**G1. MOST RECENT COMPLETE TRANSACTION + TRANSPORT**
No sub-sections, No rosters, Questions: 30, Static texts: 2.

**G2. MOST RECENT TRANSACTION COSTS**
No sub-sections, No rosters, Questions: 13.

**H. LABOR**
No sub-sections, No rosters, Questions: 7, Static texts: 3.

# Example of paper questionnaire (Excel)

Module name & number

Question number

**A2. HOUSEHOLD ROSTER**

Ask the household head first about the members of the household. Then ask the head about other people who have lived and eaten in this home for at least 6 of the past 12 months, even if they are not direct family members. Finally, make sure to include all household members who are currently absent because they migrated for work, even if they were away

| | a201 | a202 | a203 | a204 | a205 | a206 | a207 | a208 | a209 | a210 | a211 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Sex | What is [..name's..] relationship to [household head]? | What is [name's] age? | What is [name's] ethnicity? | What is [name's] religion? | What is the highest grade [..name..] has completed? | Has [..name..] ever migrated **for work** (any period longer than a month) | Is [..name..] currently migrating for work? | How many months did [.name.] live in this home in the last 12 months (Mark 0 for full-time migrants) | What is [..name..]'s primary and secondary occupation? | **A203** |
| | | | | | | | | | | | | 1 Head |
| | | | | | | | | | | | | 2 Spouse |
| | | | | | | | | | | | | 3 Son or daughter |
| | | | | | | | | | | | | 4 Sibling |
| | | | | | | | | | | | | 5 Parent |
| | | | | | *If mixed, specify which ethnicities* | *Ask only for head and spouse* | *ask only for children > 5* | *ask only for members over 12* | *ask only for members over 12* | | *ask only for members over 12* | 6 Grandchild |
| | | | | | | | | | | | | 7 Son or daughter-in-law |
| | | 1 M | | IN YEARS | | | CODES | 1 Yes | 1 Yes | Number of Months | CODES | 8 Brother or sister-in-law |
| | | 2 F | | COMPLED | | | BELOW | 2 No >> a211 | 2 No | | BELOW | 9 Parent-in-law |
| 01 | PRELOAD NAME OF HH HEAD FROM COVER SHEET | 1. HEAD | | | | | | | | | | 10 Stepchild |
| 02 | | | | | | | | | | | | 11 Other relation |
| 03 | | | | | | | | | | | | 12 Domestic worker |
| 04 | | | | | | | | | | | | 13 Permanent Employee |
| 05 | | | | | | | | | | | | 14 Other nonrelation |

Question

Cross referenced questions

Instructions

Filter question & Skip pattern

Response codes

Row numbers

The U.S. Government's Global Hunger & Food Security Initiative

# Example of questionnaire coded in ODK

| | type | name | label::English | label::Bengali | hint::Engli | hint::Beng | required | appearance | relevant | constraint | constraint |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | type | name | label::English | label::Bengali | hint::Engli | hint::Beng | required | appearance | relevant | constraint | constraint |
| 2 | start | start | | | | | | | | | |
| 3 | end | end | | | | | | | | | |
| 4 | deviceid | deviceid | | | | | | | | | |
| 5 | time | A010 | Interview start time | সাক্ষাৎকার শুরুর সময় | | | | | | | |
| 6 | select_one yn | Linkprevioussurvey | Was respondent interviewed in 2014? | এই ব্যক্তি কি আইএফপিআরআই (IFPRI) ২০১৪ জরিে | true | | | | | | |
| 7 | select_one s_name | name_enumerator | Name of the Enumerator | তথ্য সংগ্রহকারীর নাম | | | | minimal | | | |
| 8 | note | consent_statement | CONSENT STATEMENT: My name is ${name_enu | সম্মতির বিবরণ:আমার নাম ${name_enumerator} এবং আমি আপনার ব্যবসায়ের একটি সমীক্ষার জন্য সাক্ষ | | | | | | | |
| 9 | select_one yn | consent_respondent | Do you agree to participate in the survey? | আপনি কি জরিপে অংশ নিতে আগ্রহী? | | | | | | | |
| 10 | begin_group | COVERPAGE | RESPONDENT IDENTIFICATION | উত্তরদাতার পরিচিতি | | | | | | | |
| 11 | begin_group | begin_group_u2W7EFHhi | | | | | | field-list | | | |
| 12 | text | name_respondent | Name of respondent | উত্তরদাতার নাম | | | true | | | | |
| 13 | select_one yn | mobileMyn | Do you have a cell phone? | আপনার কি মোবাইল ফোন আছে? | | | true | | | | |
| 14 | select_one yn | mobileMintP | Could you please give us your phone number | আপনার মোবাইল নম্বরটি কি দেওয়া যাবে? | | | true | | ${mobileMyn}='Yes' | | |
| 15 | text | mobile_Mnumber | Phone number of respondent | উত্তরদাতার মোবাইল নম্বর | | | true | numbers | ${mobileN | regex(.,'^[ | Check the |
| 16 | select_one yn | A014 | Is respondent owner of this business? | আপনি কি এই ব্যবসায়ের মালিক/অংশীদার? | | | true | | | | |
| 17 | end_group | | | | | | | | | | |
| 18 | note | GeoRespondent | Geographic identification household | মাছ ব্যবসায়ীর ভৌগলিক পরিচয় | | | | | | | |
| 19 | begin_group | begin_group_0g1UM9Pff | | | | | | field-list | | | |
| 20 | select_one division | farmer_division | Division | বিভাগ | | | true | minimal | | | |
| 21 | select_one district | farmer_district | District | জেলা | | | true | minimal | | | |

survey | choices | settings

- Design & test questionnaire in paper format, transfer to digital format when stable

**Example of questionnaire displayed on tablet**

# Pre-test, enumerator training, survey implementation

- Rigorous pre-testing of questionnaire essential for effective data collection; survey should not be implemented unless completed

- Ensures questions are in format that respondents understand and can answer, and that all major issues are anticipated

- Enumerators should be recruited locally (same language, culture, local knowledge)

- Classroom and field-based training - 1-3 weeks, depending on complexity of questionnaire

- Implementation – permissions required, logistics

- <u>Constant supervision needed</u> to ensure data quality (small teams reporting to supervisors, daily data checks)

# Quantitative data analysis

- Key to analysis is to identify relationships between different variables
  - (e.g. how does size and location affect choice of marketing channel; how does gender/business size/credit access affect profits?)
- Initial analysis based on list of tables 'descriptive statistics' for each module: percentages, averages, income estimates, etc.
- Iterative process – looking at results from initial analysis gives clues about what other variables to combine.
- Statistical analysis comes next (e.g. tests of significance, regressions – testing relationship between different variables) – helps to strengthen interpretation of descriptive results
- Decide which results are important, and which are not, filter, interpret

Number of businesses interviewed (total and by township)

A203 – N&% gender

A204 – average age

A205 – N&% ethnicity

A206 - N&% in each educational category

A208 - N&% of businesses with name

A209 – N&% of businesses established by year (actual and cumulative)

B101 – N&% of businesses began trading maize by year (actual & cumulative)

B102 – N&% of businesses selling seed; fertilizer; pesticide; herbicide; animal feed

B103 – N & % of businesses with >1 branch; average numbers of branches per businesses (zeros in and zeros out)

B104 – N&% main & sub-branch

B105 – N&% of businesses with branches located in market

B106 - N & % of businesses operating maize collection centers

B107 - Average numbers of maize collection centers per businesses (zeros in and zeros out)

B108 – N&% of businesses exporting maize directly

B109 - N&% of businesses supplying exclusively to other businesses

B110 - N&% of businesses supplied exclusively by other businesses

# Example:
# Descriptive results prepared for survey of maize traders

| | ***Numbers interviewed*** | | | | | *****Numbers of input suppliers interviewed*** | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Numbers of trac | 218 | 66.67 | 66.67 | | | | | |
| | Numbers of inp | 109 | 33.33 | 100 | | | | | |
| | Total | 327 | 100 | | | | | | |
| | | | | | | | | | |
| | *****Numbers of traders interviewed**** | | | | | *****Numbers of input suppliers interviewed*** | | | |
| | Townships | Freq. | Percent | | Cum. | Township | Freq. | Percent | Cum. |
| | Taunggyi | 19 | 8.72 | 8.72 | | Taunggyi | 17 | 15.6 | 15.6 |
| | Hopong | 23 | 10.55 | 19.27 | | Hopong | 2 | 1.83 | 17.43 |
| | Pekon | 4 | 1.83 | 21.1 | | Pinlaung | 16 | 14.68 | 32.11 |
| | Pindaya | 17 | 7.8 | 28.9 | | Pekon | 4 | 3.67 | 35.78 |
| | Lawksawk | 40 | 18.35 | 47.25 | | Pindaya | 9 | 8.26 | 44.04 |
| | Hsi Hseng | 37 | 16.97 | 64.22 | | Lawksawk | 6 | 5.5 | 49.54 |
| | Kalaw | 6 | 2.75 | 66.97 | | Hsi Hseng | 6 | 5.5 | 55.05 |
| | Nyaung Shwe | 10 | 4.59 | 71.56 | | Kalaw | 19 | 17.43 | 72.48 |
| | Nam Sang (Shan So | 12 | 5.5 | 77.06 | | Nyaung Sh | 9 | 8.26 | 80.73 |
| | Langkho | 4 | 1.83 | 78.9 | | Nam Sang | 2 | 1.83 | 82.57 |
| | Moe Nae | 8 | 3.67 | 82.57 | | Langkho | 1 | 0.92 | 83.49 |
| | Lashio | 18 | 8.26 | 90.83 | | Moe Nae | 2 | 1.83 | 85.32 |
| | Muse | 20 | 9.17 | 100 | | Lashio | 11 | 10.09 | 95.41 |
| | Total | 218 | 100 | | | Muse | 2 | 1.83 | 97.25 |
| | | | | | | Seinni | 3 | 2.75 | 100 |
| | | | | | | Total | 109 | 100 | |
| | ****Gender of traders**** | | | | | ****Gender of input suppliers**** | | | |
| | Gender | Freq. | Percent | | Cum. | Gender | Freq. | Percent | Cum. |
| | Male | 175 | 80.28 | 80.28 | | Male | 70 | 64.22 | 64.22 |
| | Female | 43 | 19.72 | 100 | | Female | 39 | 35.78 | 100 |
| | Total | 218 | 100 | | | Total | 109 | 100 | |
| | *****Average age of traders **** | | | | | *****Average age of input suppliers ***** | | | |
| | | Mean | Median | Min | Max | | Mean | Median | Min | Max | N |
| | Average age of tra | 47.11468 | 47 | 20 | 77 | | Average ag | 46.8899 | 47 | 21 | 73 | 109 |

SecA | SecB1 | SecB2 | SecC | SecD | SecE | SecF | SecG | SecH | SecJ | SecK1

Table 8. Probabilities of making formal contracts and informal agreements with suppliers

| Variable | Formal contract with suppliers | | | | Informal agreement with suppliers | | | |
|---|---|---|---|---|---|---|---|---|
| | MLOGIT | | | PROBIT | MLOGIT | | | PROBIT |
| | Practice unchanged | Practice started | Practice increased | Practice changed due to covid (1/0) | Practice unchanged | Practice started | Practice increased | Practice changed due to covid (1/0) |
| Female owned enterprise (1/0) | 0.057 | -0.0025 | -0.054 | -0.065* | 0.075 | 0.017 | -0.093* | -0.071 |
| | (0.038) | (0.013) | (0.037) | (0.037) | (0.047) | (0.014) | (0.045) | (0.045) |
| Rural (1/0) | 0.14 | -0.22** | 0.077* | 0.046 | -0.059 | -0.094 | 0.060 | 0.062 |
| | (0.085) | (0.084) | (0.036) | (0.040) | (0.056) | (0.020) | (0.053) | (0.056) |
| Upstream (1/0) | -0.12 | 0.23** | -0.11* | -0.076* | -0.047 | 0.23** | -0.19*** | -0.145*** |
| | (0.092) | (0.088) | (0.043) | (0.043) | (0.091) | (0.085) | (0.049) | (0.049) |
| Midstream (1/0) | -0.18 | 0.24** | -0.056 | -0.013 | -0.090 | 0.24** | -0.15** | -0.100** |
| | (0.092) | (0.089) | (0.041) | (0.042) | (0.093) | (0.088) | (0.049) | (0.051) |
| Lateral (1/0) | 0.047 | -0.00058 | -0.046 | -0.055 | -0.11 | 0.22** | -0.11* | -0.085* |
| | (0.040) | (0.0026) | (0.040) | (0.043) | (0.088) | (0.082) | (0.048) | (0.051) |
| Non-small business (1/0) | -0.010 | 0.021 | -0.010 | 0.011 | -0.053 | 0.0097 | 0.043 | 0.051 |
| | (0.033) | (0.014) | (0.031) | (0.031) | (0.040) | (0.014) | (0.038) | (0.039) |
| North (1/0) | 0.21*** | 0.0042 | -0.21*** | 0.202*** | 0.17*** | 0.011 | -0.18*** | 0.174*** |
| | (0.035) | (0.011) | (0.033) | (0.029) | (0.036) | (0.013) | (0.033) | (0.034) |
| N | 435 | 435 | 435 | 435 | 435 | 435 | 435 | 435 |

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Example:
Regressions on relationship between key business characteristics (gender of owner, location, size, position in VC) on likelihood of adopting different behaviors

# Results (for each value chain segment) – qual & quant

1) The **structure of the segment** (the main **geographical locations** where the segment exists; estimates of the **number of the main types of actor** in each location; **size of actors**)

2) Characteristics of **main types of actor** in the segment in terms of social, cultural and economic characteristics (scale, religion, ethnicity, wealth, political power, etc.)

3) Details of the **main products** produced or traded in each location studied (including estimated volumes)

4) Details of the **main activities conducted** by the main types of actor in each segment (Buy, Make and Sell, and type of work performed)

5) Details of **performance** (e.g., productivity, profitability, employment, product quality, inclusiveness, environmental performance)

# (Dis)/enabling environment

**Infrastructure:** Road, canals, large irrigation schemes, telecommunication, electrification, physical marketplaces - mainly provided (or facilitated) by government

- Lack of infrastructure inhibits the chances of growth taking place, and vice versa

**Policies:** Economy is comprised of interlinked VCs, so policies that effect one area can affect other up- or downstream VCs:

e.g., Decision to open Bangladesh's economy to import of Chinese motors:

→ made shallow tube well irrigation widely available → facilitated massive increase in rice cultivation → lowered price of rice so consumers have more money to send on other foods like fish/poultry

# (Dis)/enabling environment

**Institutions**

**Government:** (e.g. Universities &  research institutes; agricultural extension departments; banks; marketing boards provide services)

- R&D; training; regulation; credit; geographical indications (e.g. OTOP)

**Non-government & private** (e.g. NGOs, media, financial institutions)

– Pressure to improve environmental performance, labour standards; certification; credit

**Analyze a value chain**: 4 groups; 4 value chains:

-      e.g., Chicken; Rice; Mangos; Maize (or pick another one that your group prefers)

Make notes on the following and report **for each VC segment** :

**Main types of actors** (farmers, processors etc.), their **scale & location** (e.g., small/large, subsistence/commercial; rural/urban), their **social characteristics** (gender, age, ethnicity)

Main **Assets** used by actors in each segment (land, buildings, machinery, vehicles etc.)

**Buy:** The main inputs used in production; the lateral VCs that supply them; how they are sourced (own production/ spot markets/ contracts etc.)

**Make:** Any activities that add value – grading, sorting, storing, processing - & labor used

**Sell:** Main products/byproducts sold; end markets (rural/urban; domestic/export; consumer/downstream VC actors); how they are sold (spot markets/ contracts etc.)

Any **logistics** services used (e.g., transport rentals; storage services) & **credit** sources

Supporting **infrastructure**; **policies** that affect the sector

**Changes** occurring in past 5-10 years in any of these

Thank you