

# Key levers of change for farming sustainability

Prof. Naoufel Cheikhrouhou  
Inès Burrus

# Meet The Team

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Prof. Naoufel Cheikhrouhou

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Professor of supply chain, logistics and operations management at the Haute école de gestion de Genève.

Research Supervisor

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Mrs. Inès Burrus

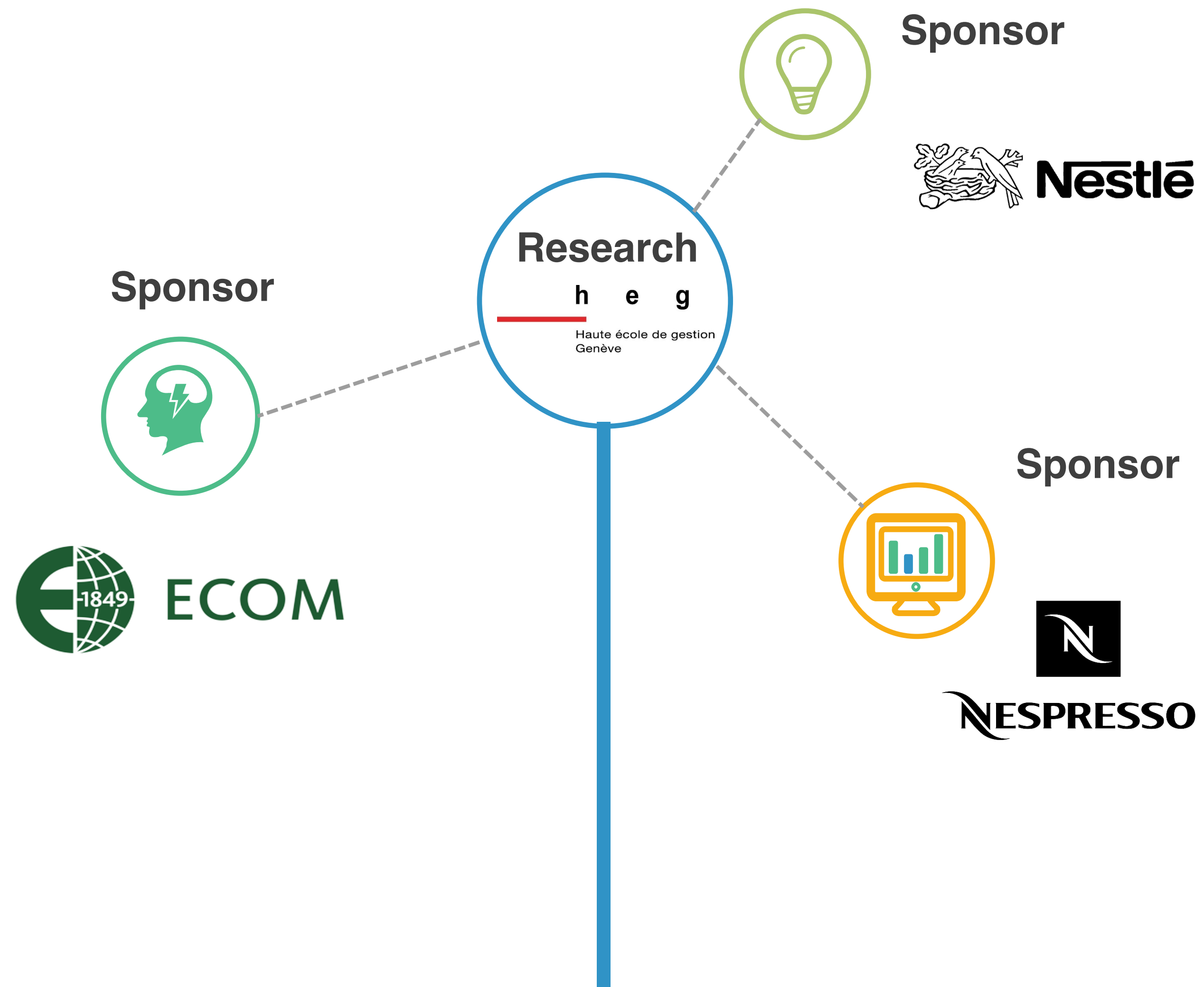
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Ph.D. student at the Faculty of Business and Economics of the University of Lausanne.  
Research Assistant at HEG-Geneva.

Implementation of  
the Research Agreement

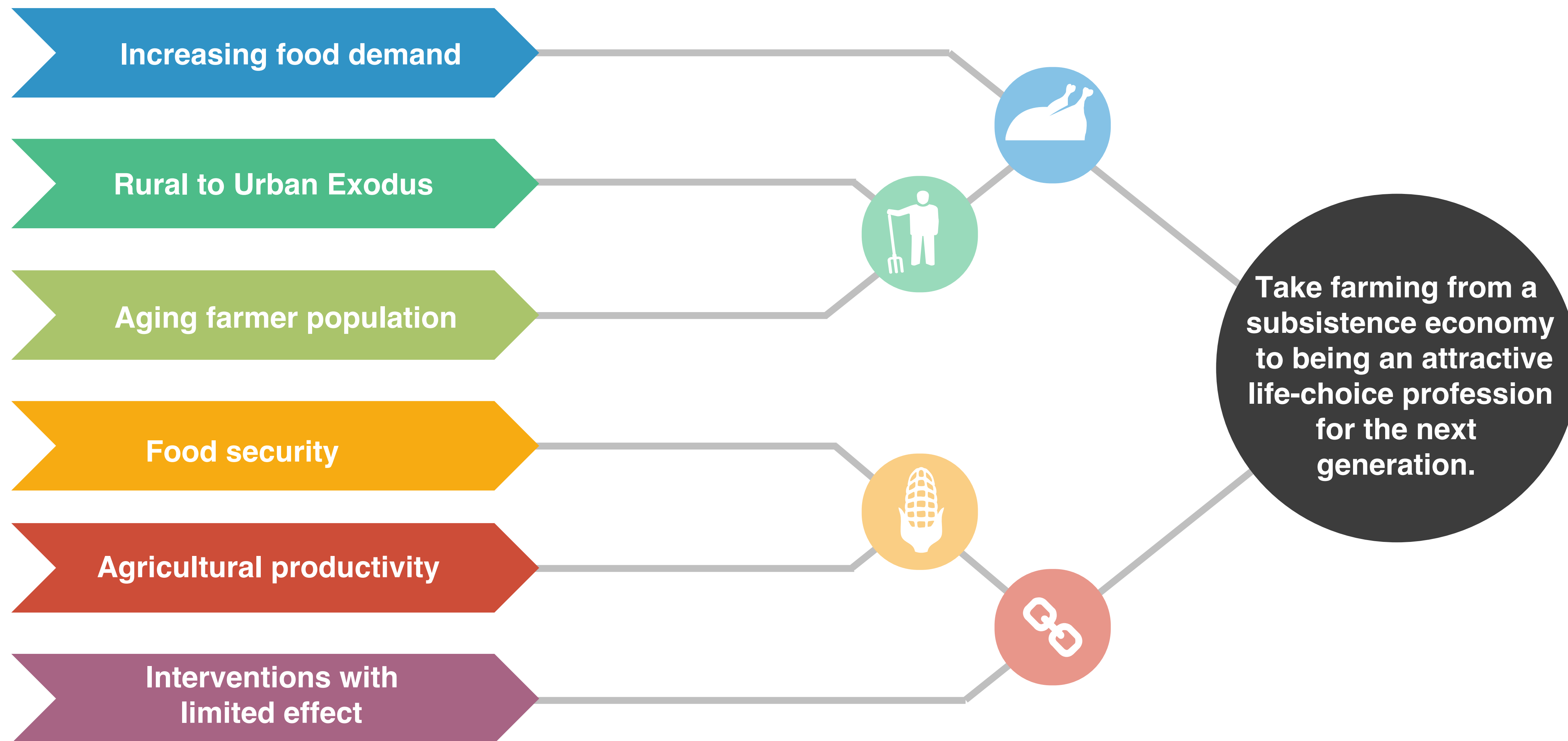
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# Project Set-up

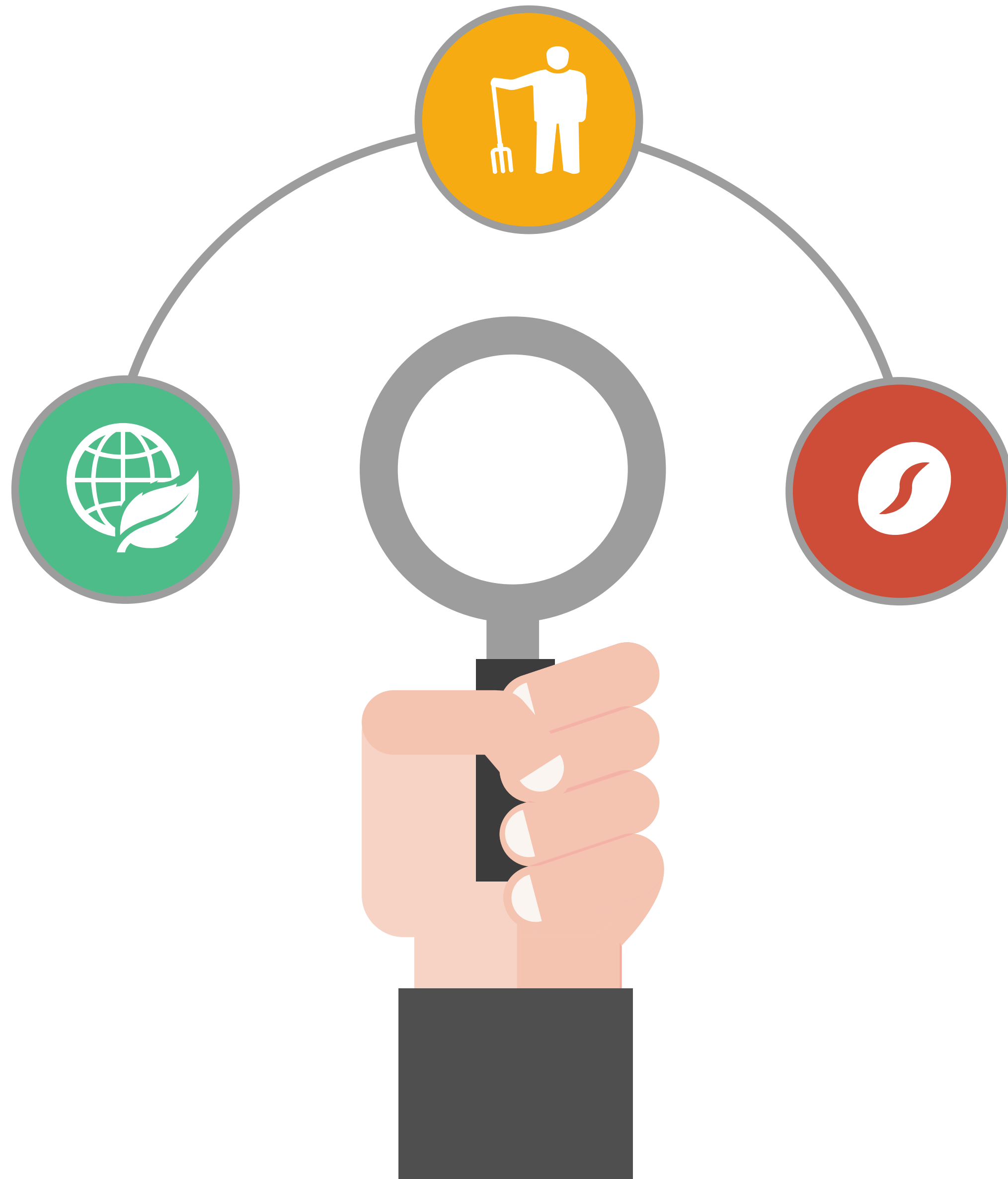




# Research Problem



# Research Questions



1

Under which conditions is farming declining globally?

2

Under which conditions can farming be made attractive and accessible for new entrants, especially young people?

3

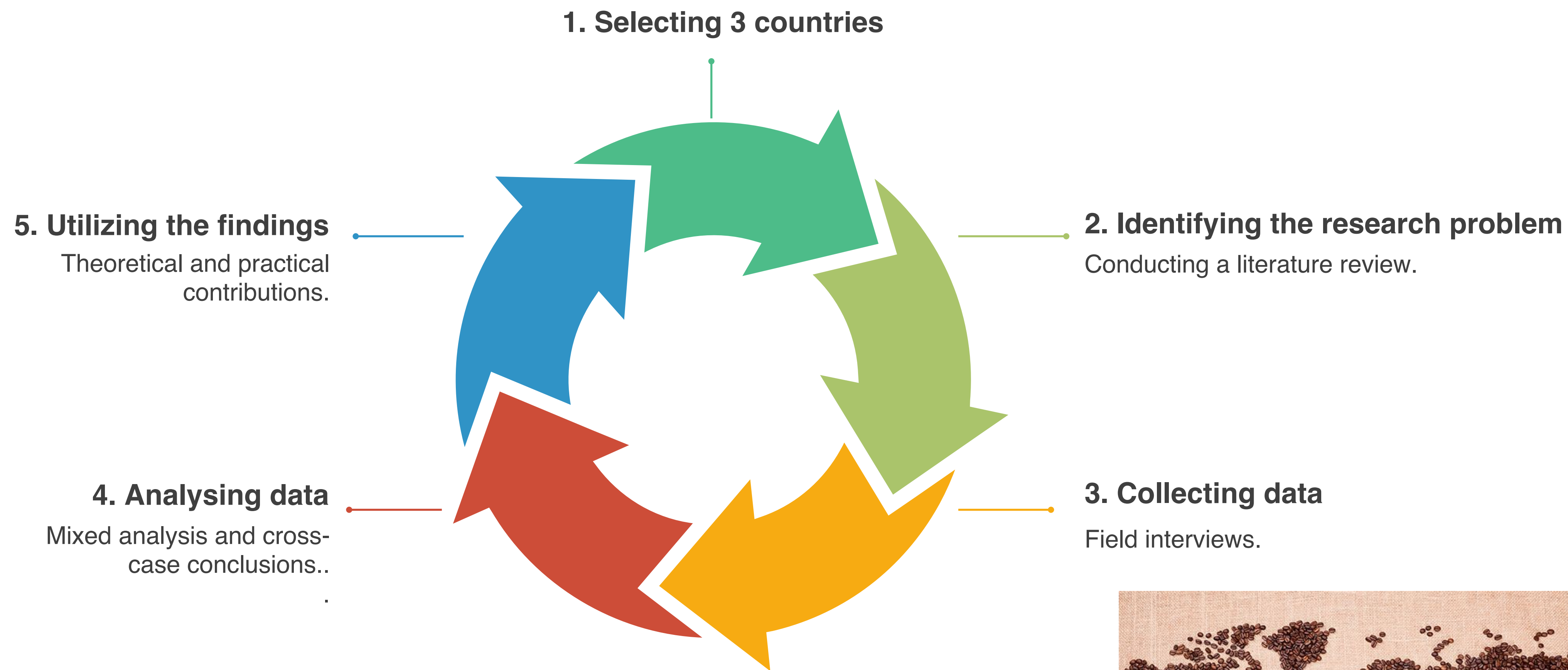
How do RQ 1 and RQ 2 apply to smallholder farming, especially cocoa and coffee farming?



# Systematic Review



# Case Studies







Thank you for your attention!



# References

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**Indo-Swiss Joint Research  
Programme in the Social Sciences**



# **Founding The Pillars For Sustainable Agri-food Supply Chain Management**

**Presented by  
Prof. Naoufel Cheikhrouhou**

**Geneva School of Business Administration,  
Switzerland**



**SUSTAINABILITY**

**SOCIAL PILLAR**

**ENVIRONMENTAL  
PILLAR**

**ECONOMIC PILLAR**



Illustration by Khalida Haq

# Overview

Founding the pillars for Sustainable  
Agri-Food Supply Chain Management

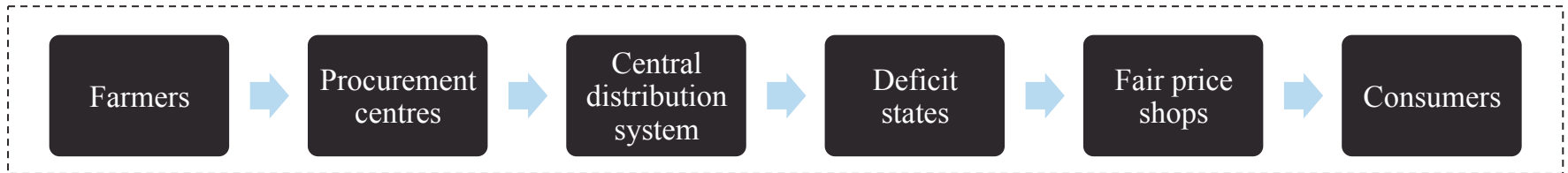
- ❑ Introduction
- ❑ Project overview
- ❑ Objectives
- ❑ Partners
- ❑ Approach/Methodology
- ❑ Expected outcomes
- ❑ Current progress



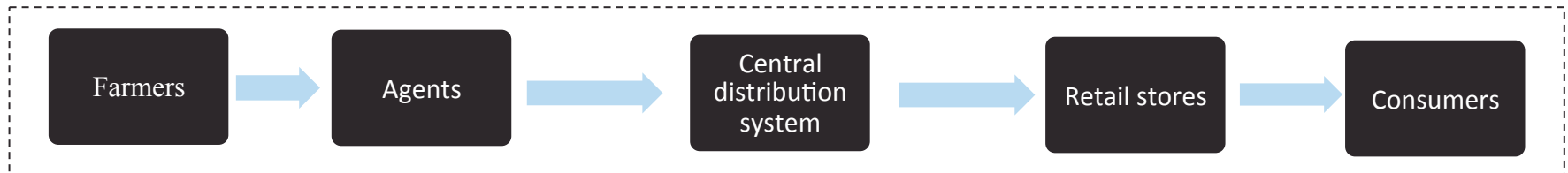
# Introduction

Founding the pillars for Sustainable  
Agri-Food Supply Chain Management

## Food grain supply chain system



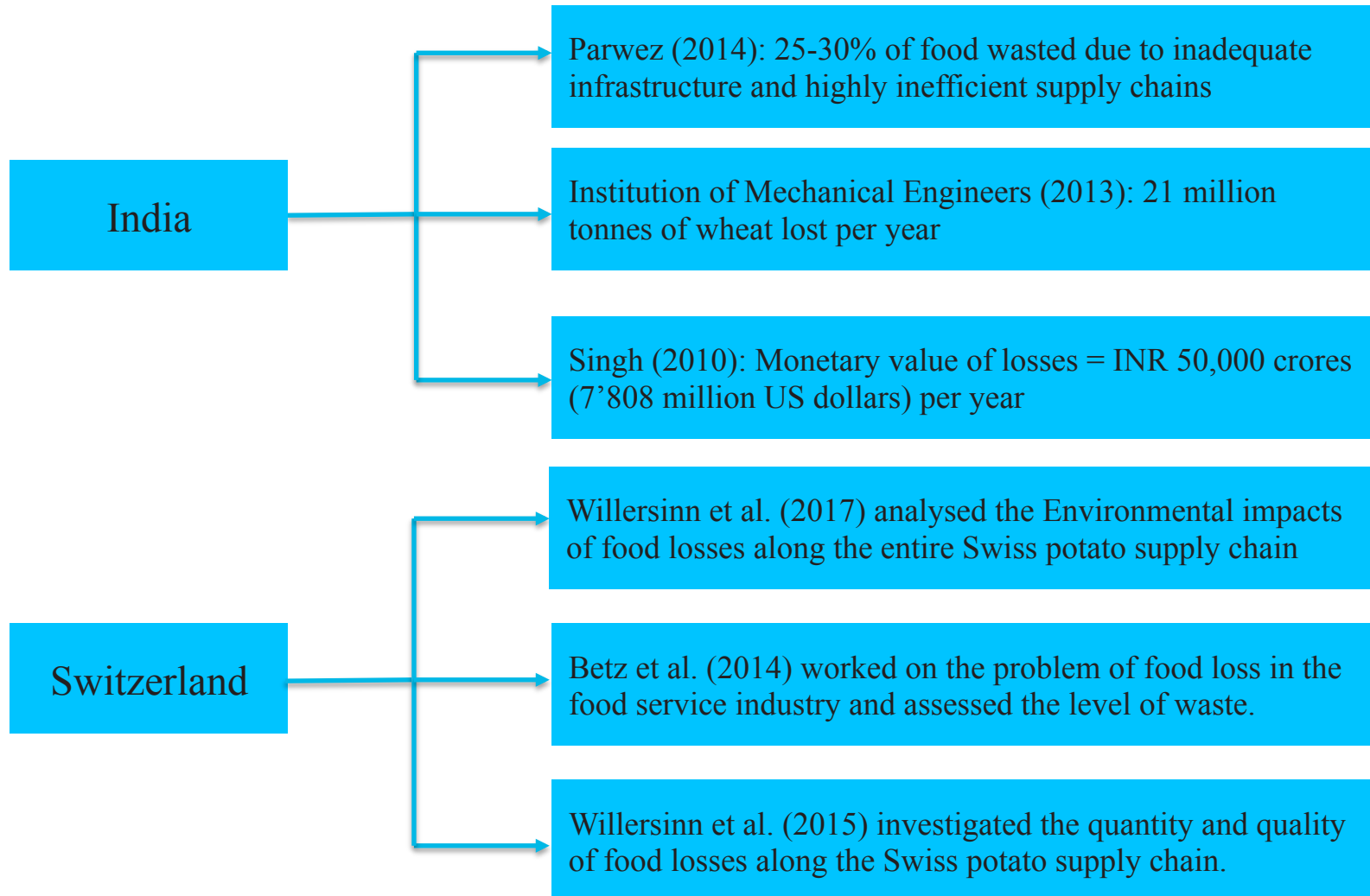
## Vegetable and fruits supply chains





# Food supply chains in India and Switzerland

Founding the pillars for Sustainable  
Agri-Food Supply Chain Management



# The basic concept of sustainability

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Agri-Food Supply Chain Management



# Need of sustainability in agri-food supply chain

Founding the pillars for Sustainable Agri-Food Supply Chain Management

## Challenges of agri-food supply chain

- Growing demand of food due to increasing world population
- Food wastage ( Annually worldwide 1.3 billion tones of food gets wasted)
- Providing support to farmers and employment to people
- Water and Carbon Footprint of Food supply chains
- Energy consumption at farming level and food processing stage
- Product bulkiness, perishability, seasonability, food safety and quality

Sustainable agri-food supply chain  
(Economic, Social and Environmental)



# Objectives

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Agri-Food Supply Chain Management

- 1 To analyse practices in agri-food supply chain design and management in India and in Switzerland
- 2 To compare the data regarding the impact of the management of agri-supply chains on the economic, societal and environmental performances
- 3 To benchmark best practices for understanding and managing agri supply chains of both countries
- 4 To propose lean strategies to minimize non value-added activities from collection to storage of food using optimal utilization of storage capacity.
- 5 To study and recommend approaches to minimize the food wastage impact on environment's valuable resources such as land, water and energy.

# Project partners

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## Project collaborators

Swiss collaborator

Prof. Naoufel Cheikhrouhou leads a research fully funded by food companies in Switzerland (Nespresso and ECOM).  
Handled several research projects in the area of sustainable supply chains

Prof. Manoj  
Kumar Tiwari

Indian Institute of Technology,  
Kharagpur

Prof. Ravi  
Shankar

Indian Institute of Technology,  
Delhi

Ph.D.  
student

Inès Burrus

Mr. Dnyaneshwar  
Mogale

Prof. Ravi Shankar just completed tri-lateral international research project on “*Next Generation Sustainable Freight Transportation (NEX-GIFT)*”. He is also the co-investigator in European Union funded research project on “*Efficient & Sustainable Freight Transportation.*”

Prof. Tiwari is the Principal Investigator (PI) of the interdisciplinary project entitled “Sustainable Food Security through Technological Interventions for Production, Processing and Logistics” which involves the other three departments. It is sponsored by Ministry of Human Resource Development (MHRD), Govt. of India.



# Approach/ Methodology

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Data collection from various reports related to Indian and Swiss agri-food supply chain system, online portals of food system of both countries, Food and Agricultural Organization (FAO) reports

Field visits, interviews and questionnaire surveys

Life Cycle Assessment (LCA) for identification and quantification of environmental impacts of food wastage

Multi-objective modeling by integrating the economic, environmental and social dimensions of sustainability

# Expected outcomes

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Agri-Food Supply Chain Management

## Scientific side

A framework for benchmarking best practices in food supply chains in both countries

A public database on the impact of the management of agri-supply chains on the environmental, the societal and the economic performances

A proposal for an effective and efficient design and management of sustainable Agri-food supply networks in both countries

Three (3) joint publications in high impact scientific journals

## Cooperation side

Three visits between India and Switzerland.

Development of MoU on research and education between the three partners.

Development of one new joint research proposal on sustainable supply chains to be submitted for funding to the EU framework Programme 'Horizon 2020'.

# Timeline

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Agri-Food Supply Chain Management

Tentative Schedule Work	Oct'17- Nov'17	Dec'17- Jan'18	Feb'18- Mar'18	Apr'18- June'18	July'18- Aug'18	Sept'17 Oct'18
Practice Analysis/ state of the art development						
Objective II						
Objective III						
Objective IV						
Objective V						
Report writing						

# Thank You

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Founding the pillars for Sustainable  
Agri-Food Supply Chain Management

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