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THEMATIC OVERVIEW

EASYPol Module 209

Risk Management as a Pillar in Agriculture and Food Security Policies - India Case Study

Policy Brief

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Risk Management as a Pillar in Agriculture and Food Security Policies: India case study
Policy Brief

By

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For the

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, FAO

About EASYPol

EASYPol is a an on-line, interactive multilingual repository of downloadable resource materials for capacity development in policy making for food, agriculture and rural development. The EASYPol home page is available at: www.fao.org/easypol.

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1. SUMMARY

In India, agricultural risks are exacerbated by a variety of factors, ranging from weather variability, frequent natural disasters, uncertainties in yields and prices, weak rural infrastructure, imperfect markets and inadequate and sub-optimal financial services. These factors not only endanger the livelihoods and incomes of small farmers but also undermine the viability of the agriculture sector and its potential to become a part of the solution to the problem of the endemic poverty of farmers.

This paper presents a comprehensive set of agriculture risk management tools and policies provided within a global framework by both the public and private sectors in India, while specifying the role and limits of every tool implemented. The presentation is a wide overview of agriculture risk management policies in India and demonstrates high synergy with other sector policies.

In addition, this paper illustrates a serious effort of adaptive policy making by using an iterative approach in the experiences of piloting innovative risk management tools.

2. INTRODUCTION

Objectives

The objectives of this diagnosis were first to assess the relevance of current risk management tools, secondly to identify risk management policy options in rural areas that could improve the current economic resilience of Indian agriculture sector to main risks within climate change adaptation and resilience to international market/ crisis shocks, and last to identify risk management success stories in India with potential transfer towards other developing countries

This policy brief aims to leverage the main findings, action proposals and policy recommendations that have emerged from this review and group brainstorming with technical and institutional partners.

Target audience

Agriculture Policy Makers and Official National decision makers , technical partners involved in implementation of food security strategies climate adaptation and disaster risk management support programmes

Required background

Readers can follow links included in the text to other EASYPol modules or references[1]. See also the list of EASYPol links included at the end of this policy brief.

[1] EASYPol hyperlinks are shown in blue, as follows:
a) training paths are shown in **underlined bold font**
b) other EASYPol modules or complementary EASYPol materials are in ***bold underlined italics***;
c) links to the glossary are in **bold**; and
d) external links are in *italics*.

3. TOWARDS A COMPREHENSIVE RISK MANAGEMENT POLICY FOR SMALLHOLDERS

In India, agricultural risks are exacerbated by a variety of factors, ranging from weather variability, frequent natural disasters, uncertainties in yields and prices, weak rural infrastructure, imperfect markets and inadequate and sub-optimal financial services including the limited span and design of risk mitigation instruments such as credit and insurance. These factors not only endanger the livelihood and incomes of small farmers but also undermine the viability of the agriculture sector and its potential to become a part of the solution to the problem of endemic poverty of farmers and agricultural labour. The critical nature of agriculture with respect to rural transformation and the national economy, considered alongside its inherent structural characteristics, requires substantial governmental and financial sector interventions in order to not only ensure the food and nutritional security of households in the farming community but also generate savings and investments in this grossly under-funded sector. The poor infiltration and development of various risk management tools in India also represents huge opportunities for the emerging agricultural insurance and commodity markets in terms of pulling producers out of the poverty trap by insulating them from income shocks and ensuring that a fair share of the price goes to the producer.

Farmers use a variety of formal and informal techniques to manage and mitigate risk, ranging from the use of drought resistant crop varieties to reduced consumption and sale of assets. The Government is also implementing a large number of schemes to provide succour to farmers facing adversity.

As it is currently operating, the Comprehensive Agriculture risk management framework can be presented in three main categories:

- The first covers **direct initiatives on the part of the Government,** such as agricultural credit, input subsidies and calamity relief.
- The second covers **indirect initiatives on the part of the Government** to mitigate production risks through insurance mechanisms covering crops, weather and livestock and including micro insurance.
- Thirdly, **Government and market-based approaches to mitigate price or income risks**, which includes minimum support prices, farm income insurance, a price stabilization fund, commodity markets, contract farming, etc.

Figure 1: Comprehensive Agriculture risk management framework

4. FINANCIAL INPUTS & CALAMITY RELIEF

4.1. Agriculture credit

India has perhaps the world's largest network of rural financial institutions, boasting 30,272 nationalized commercial bank branches; 2,934 other commercial banks; 14,241 rural regional bank branches and about 122,000 credit outlets from the cooperative sector which cater to the credit requirements of the priority sector (agricultural and related sectors). With the objective of providing adequate credit to the agriculture sector, the Government framed rules stipulating that 18% of each bank's net credit should be given to the agriculture sector.

In addition, credit procedures have been simplified, thus paving the way for small/marginal farmers to be able to access credit. In 2007, 67.6 million credit cards were issued to farmers. The Government further stipulated that the interest charged by banks for the agriculture sector should not exceed 7%, while reimbursing the banks 2 percentage points as a subsidy (making the difference between the 9% commercial lending and 7% lending rate for the agricultural sector). At the same time, banks are asking for an Agricultural Risk Fund to mitigate their losses on account of poor rates of recovered loans during adverse crop years.

4.2. Input subsidies

Important subsidies for inputs to the agriculture sector are with respect to fertilizers; power; irrigation; credit; and agricultural price guarantees. Year after year, the Government spends a huge amount of money on subsidizing these inputs. For example, the quantity of fertilizer subsidy for 2007-08 is estimated to be INR 500 billion (US$10.26 billion). Many researchers and economists feel that input subsidies are progressively losing their relevance and are becoming an unbearable fiscal burden.

Economists feel that a policy of subsidizing inputs can be justified if: (i) the introduction of a new inputs warrants risk-sharing with the state; (ii) the use of subsidized inputs ensures a continuous increase in productivity, shared by both producers and consumers; (iii) subsidizing inputs is the only way to transfer income to poor producers; (iv) in the case of heavily traded products, trading partners are resorting to overt or covert subsidization, and there is no other way to redress this situation.

However, the present agriculture subsidy regime suggests that none of the arguments for input subsidization apply. Suggested actions include: (i) capping input subsidies; (ii) a phased programme of progressive withdrawal of subsidies; (iii) earmarking the amount saved from input subsidies so far as an addition to funds to be used for strengthening rural infrastructure, research and extension; (iv) well-defined and effective measures to improve efficiency and plug leakages in input supplies; (v) involving users in the distribution of power and canal water, etc.

4.3. Calamity funds

India has one of the best Calamity/Disaster Relief mechanisms among developing nations. The Calamity Relief Fund (CRF) was created at the State level with contributions from both central and state Governments (3:1 ration) and is used to pay for relief in the event of droughts, floods, cyclones, hailstorms, tsunamis, etc. The National Calamity Contingency Fund (NCCF) was created at central level with 100% contribution from the Central

Government, and is used for any relief operations not covered by the CRF. The Twelfth Finance Commission has allocated a fund of INR 213.33 billion (US $4.377 million) for the 5 year period between fiscal year 2005-06 to fiscal year 2010-11.2 Though the Calamity Funds were formulated with a noble cause, their execution, efficiency and timely availability are riddled with shortcomings.

In December, 2005, the Indian Government instituted the Disaster Management Act (DMA), which set up a mechanism for the creation of a National Disaster Management Authority (NDMA); a State and District-level Disaster Management Authority; a National Executive Committee (NEC); a National Institute of Disaster Management (NIDM); and a National Disaster Response Force (NDRF). Through these efforts, the Government has brought about a change in the approach to disaster management. It has gone from relief-centric to holistic, covering the entire cycle of disaster management including prevention, mitigation, preparedness, response, relief and rehabilitation. The approach was elaborated based on the conviction that development cannot be sustainable unless disaster mitigation is built into the development process.

5. PRODUCTION & ASSET PROTECTION

5.1. Area yield–based crop insurance

India is administering the world's largest crop insurance programme in terms of the number of farmers insured. The National Agricultural Insurance Scheme (NAIS) annually insures approximately 18 million farmers, or 15% of all farmers and approximately 17% of all farmed land. The Government has been considering improvements to the crop insurance programme for some time and review committees were set-up accordingly. Major improvements identified are:

- Bringing the Insurance Unit down to the village Panchayat level so as to minimize the base risk..
- Using a longer time yield series when in fixing the Guaranteed Yield, to ensure more stable coverage.
- Increasing the levels of indemnity (coverage).
- Introducing insurance to prevent sowing/planting and post-harvest losses under adverse conditions.
- In case of major disasters, allowing for the partial settlement of claims on accounts.
- uniform seasonality discipline (cut-off dates for buying insurance) be employed for participation for all farmers, both borrowing and non borrowing.
- Covering horticultural crops such as vegetables and fruits.
- Introducing a gradual shift from an administered price regime to an actuarial one, supported by up-front subsidy as a premium.
- Adopting transparent norms for subsidy premiums with the participation of the private sector participation.

[2] CRF

- Sharing of premiums by banks, where lending banks bear 25% of the premium payable by the farmer, subject to a maximum of one percentage point of the premium, for example.

Through these improvements, the Government is expecting to double the penetration of crop insurance schemes by 2012.

5.2. Weather-based crop insurance

Weather-based crop insurance appeared in India in 2003. At present, Agriculture Insurance Company of India (AIC), is providing weather-insurance services along with two private insurers. Though most of these attempts were taken on the initiative of particular insurers until 2006-7, in 2007-8 the Government began offering an alternative to NAIS by initiating pilot projects in select areas for select crops.

While weather-based crop insurance appears a priori to be an attractive proposal, it is confronted with many constraints. These include: (i) a sparse network of weather stations belonging to the India Meteorological Department (IMD), and the consequent lack of high quality weather data for locations smaller than the district level; (ii) prohibitively high premium rates for farmers; (iii) the limited scope of weather insurance (it only covers parametric weather events), compared to the 'all risk' nature of 'area yield' insurance, etc.

Beginning with the Rabi season in 2007-8, the Government has allowed for private sector participation with comparable levels of financial support. Although a bit overstated, weather insurance has a role to play, particularly as 'complementary' to the existing area yield crop insurance.[3]

Monsoon-linked insurance indices can provide adequate collateral in terms of encouraging banks to lend more liberally to the agriculture sector. Weather insurance is a good bet for crops with no historical yield estimates. Similarly, weather indices can be used to make early payouts in area covered by yield crop insurance. In addition, the weather index can be used to design double trigger insurance products. A macro weather index can be an ideal tool for protecting a large portfolio at the district/regional/state levels against drought or floods. Ultimately, the success of a weather insurance programme in India would depend on the product design; steps taken to minimize the base risk; the adoption of reliable and sustainable pricing mechanisms (including Government subsidies); and resolving issues of product servicing and timely payout.

5.3. Livestock insurance

Livestock forms a significant proportion of rural wealth and is an important source of rural livelihoods in India. In addition, livestock-related activities are the exclusive source of income for some rural community members.

Livestock insurance began in the early 1970s and still maintains the same 'plain vanilla' offerings in terms of scope and coverage. This type of insurance still covers only accidental death (basic coverage) with permanent total disability as an optional coverage. The premium

[3] (NAIS)

for basic coverage is 4% in the case of general animals and 2.25% in the case of animals financed under Government schemes. Despite being in existence for over 30 years, the total penetration of livestock insurance in the rural areas is still poor. The Government has recently introduced a pilot scheme on livestock insurance in 100 districts with a 50% premium subsidy for two animals per family.

Livestock insurance offers tremendous prospects in terms of product scope, offers (particularly with respect to endowment policies) and control over claims, if only there is an effort to provide the requisite insurance awareness and education.

5.4. Micro-insurance

There are three distinct phases of micro-insurance (MI) development in India. The first phase coincided with the introduction of target- oriented poverty alleviation programmes such as the Integrated Rural Development Programme (IRDP). The second phase of MI growth can be seen in conjunction with the growth of credit disbursement to the poorer segments of society through the Self Help Groups (SHGs). This saw an increase in the role of Non-Governmental Organizations (NGOs) for the purposes of intermediation and the proliferation of Microfinance Institutions (MFIs). The third phase of MI development was borne out of the increasing realization of the need for an increased coverage of poorer households through some form of social security measure.

Recognizing the need for insurers to adjust the costs they face in serving marginal clients in remote areas; collecting premiums and instalments; and offering doorstep services, the Insurance Regulatory & Development Authority (IRDA) announced the introduction of new micro-insurance regulations in December 2005. These regulations enable an insurer with a life insurance business to offer life micro-insurance products as well as non-life micro-insurance products to poor households. Similarly, an insurer providing non-life insurance services may offer general micro-insurance products as well as life micro-insurance products. Most MI products on the market are related to health insurance, with only a few offering insurance for assets, livestock, crops, etc. While India boasts tremendous MI potential, some areas within the regulations require amendments in order to achieve their full potential.

6. MARKETING & PRICE INSURANCE

One major issue in an agrarian economy is in the form of price fluctuations, as they pose a serious risk to farmers' income and well-being. Supply-side problems and agricultural marketing system as well as infrastructure weaknesses contribute to farmers' risk in terms of price/income realization. Furthermore, seasonal production also leads to price volatility when harvested crops reach markets in very large volumes within a short time span. When there is a bumper crop, the farmer finds himself in a buyer's market during the peak marketing season, making him a price-taker. Even though globalization and liberalization are expected to benefit farmers by creating greater opportunities for better price realisation, the market sometimes exposes them to greater risks as most agricultural commodities, particularly those grown by small farmers, are not well-known at the international level.

6.1. Agriculture price risk management instruments

6.1.1. Minimum Support Prices (MSP)

It is as a result of these factors that the Government has pursued a policy of insuring a remunerative and stable price environment for so long. Specific instruments include Minimum Support Prices (MSP) and Market Intervention Schemes (MIS). MSP is available for as many as 25 different agricultural commodities, accounting for 80% of gross farmed area and approximately 75% of the gross value of crop production.

MSP has been largely successful in keeping prices under control from the consumer point of view. On the other hand, the utility to producers has long been questioned, as only farmers from a few States and only a few commodities are able to take advantage of MSP. Causes of worry include the extent of Government funds involved in the MSP-based procurement operations; storage wastage and inefficiencies in handling operations. While the Government wants to make the MSP universal, many economists feel that the Government's procurement of food grains should be limited to its requirement for buffer stocks and welfare schemes like public distribution systems.

6.1.2. Electronic Spot Exchanges

The present marketing system, as governed by the Agricultural Produce Marketing Committee (APMC) Act is replete with problems such as a non-transparent auction system; poor incentives for quality-consciousness; multiple layers of intermediaries; poor infrastructure; informal credit linkages; significantly less buyers vis-à-vis sellers, etc., all of which contribute to creating disadvantaged transaction terms for primary producers.

As a result, the need for near-perfect physical market networks in India is becoming increasingly acute with the emergence of national-level futures exchanges over the course of the last few years, the former being a prerequisite for the effective functioning of the latter. Objectives of an electronic spot market include transparency of physical markets; better links to quality parameters; improved information availability across players' groups; reduced wastage through the creation of better infrastructure; value-added along the supply chain; and better price references for futures markets.

The model of electronic spot exchange is highly scalable because of its standardized operation, high level of technology-orientation and the potential availability of private investments. India is piloting this system though SAFAL National Exchange (SNX) in Bangalore, which in a matter of seven months has been scaled to thirteen additional districts. The model presents the electronic platform to be directly accessed by authorized brokers. Both buyers and sellers transact through these brokers. The presence of an electronic exchange absorbs counter-party risks and ensures the open dissemination of prevailing price levels. In addition, the auction system is technology-driven, where the parties involved enjoy complete anonymity. Scalability of this model is relatively easier because it attracts authorized brokers with investments to extend the technical infrastructure. Electronic Spot Exchanges are here to stay and provide huge marketing support to farmers.

6.1.3. Price Stabilization Fund (PSF)

In 2002, the Government launched an income stabilization fund for small farmers of four plantation crops, namely coffee, tea, rubber and tobacco. The fund works as a savings account whereby Government contributes to the account during distress years, farmers contribute during boom years and both parties share the contribution equally during normal

years. The fund was envisaged to benefit some 342,000 small growers out of 1,277,000, but could only succeed in securing the participation of 45,188 growers. On studying the functioning of the fund, the Review Committee made some very pertinent and relevant suggestions, including changes in price band, quantity of Government contribution, operation of account and withdrawal and additional benefits such as personal accident insurance, etc. PSF can play the role of income mitigation instrument for small farmers if amendments are made on the basis of the suggestions of the review committee and realities on the ground.

6.2. Commodity markets and Contract farming

6.2.1. Commodity markets

Despite the long history of commodity derivatives markets, they have recently been re-introduced in India to benefit farmers from price discovery and to protect them from adverse price fluctuations. Through commodity markets, farmers can hedge their risks by taking a position in the futures market and insuring against adverse price fluctuations in the physical market. However, due to the predominance of small and marginal farmers, a lack of awareness and other restrictions, so far there is a negligible participation of Indian farmers in the commodity futures market. Creating conditions for rural farmers to access them is a challenge for agricultural policy planners.

Some of the measures suggested to encourage the participation of farmers in futures markets include: encouraging and allowing banks, cooperative institutions, and SHGs to act as aggregators on behalf of farmers in futures markets; permitting 'options' and 'weather derivatives' trading; upgrading and strengthening warehouse infrastructure near production centres; allowing private players to set up e-mandis (markets), and permitting competition amongst the existing mandis.

The recently issued Forward Contracts (Regulation) Amendment Ordinance (2008) is expected to strengthen and restructure the Forward Markets Commission (FMC) while ushering in much awaited instruments like 'options', trading of weather derivatives, etc.

6.2.2. Contract farming

Contract farming is a structural issue in terms of agriculture production and marketing. Its chief aim is to bring agricultural management in line the best agricultural production practices while insuring a competitive and pre-arranged price to farmers. Thus, contract farming can play an important role as an alternative risk management instrument. While India is catching up quickly with the contract farming model, the requisite developmental and regulatory framework is not yet in place. Most present contract farming contracts are loose and heavily loaded against the farmers. With the proper enabling environment, including public/private partnerships, contract farming can be a very useful risk mitigation tool for small farms.

6.3. Revenue based farm income insurance

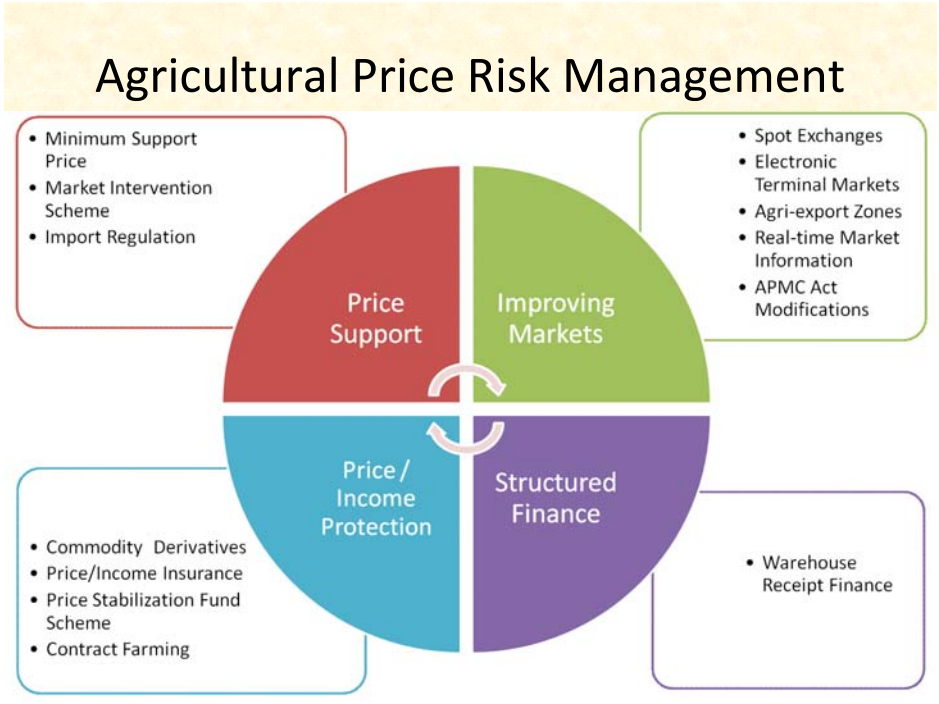
India experimented with a small pilot project on farm income insurance in 2003-04 with rice and wheat, primarily as an alternative to minimum support prices based on food grain procurement. The other objectives sought included crop diversification and private trade.

The pilot was based on a 'homogeneous area' approach. The actual income is worked out as a function of current yield and current market price, while the guaranteed income is based on average yield over seven years with an indemnity level of 80% or 90% and a minimum support price. Insured farmers would be paid indemnity if the actual income is lower than the guaranteed income. The pilot covered 401,822 hectares of crops for a risk value of INR 4.2 billion (approximately US $86.26 million). The premium collected was INR 284 million (approximately US $9.94 million), against which indemnities paid were INR 287 million (approximately US $5.89 million).

The pilot was withdrawn, primarily because MSP-based procurement could not be withdrawn as planned at the time of the pilot. Nevertheless, review of the pilot had come out with some important lessons. It is possible to implement farm income-based insurance by generating the guaranteed income on the basis of either the futures price or an average of market prices corrected for inflationary trends. The crops best suited for this model are those with high price fluctuations e.g. pulses, spices etc.

This accumulation of complementary tools on agriculture price risk management are illustrated below in the form of a wide panel of instruments that complement each other and are completed by other policy measures:

Figure 1: Agricultural price risk management



7. CONCLUSIONS

In this paper, we have presented the enabling actions and interventions by stakeholders from the public and private sector as well as civil society that have served as mechanisms to manage the risks smallholders face within the Indian agriculture sector. It is easily discerned that the various stakeholders in question are reasonably aware and concerned about the risks

smallholders face, as manifested by the large number of policy measures and mechanisms for managing these risks.

The immense scale of problems afflicting smallholders is compounded by their massive numbers, high geographical dispersion, limited awareness, frequent and high levels of exploitation as a political constituency, poor collective organization and low access to support schemes by the Government.

The plethora of Government policies and interventions has been successful in ameliorating the problems of smallholders, though to a limited extent. One of the common limitations has been the supply-driven nature of these interventions, which has overlooked the need for building a commensurate social and economic infrastructure so that target beneficiaries are equipped to take advantage of these interventions. Greater representation of relevant farmer interest groups, voluntary grassroots-level organizations, business service providers and corporate entities in the design, implementation and evaluation of these measures can ensure the more effective inclusion of farmers' demands and a higher level of responsiveness in turn.

Multi-stakeholder partnerships may be made imperative for programmes aimed at widespread coverage or large-scale implementation. Technology-driven programmes, particularly which are ICT-enabled, should also be promoted, especially for programmes involving a significant monetary-transfer component, due to their high scalability, independence from socio-economic and political biases, low operational costs, and better control over financial leakages.

8. READERS' NOTES

8.1. EASYPol links

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METADATA TABLE

1. EASYPol module 209

2. Title in original language

English	Risk Management as a Pillar in Food Security Policy India Case Study
French	
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Other language	

3. Subtitle in original language

English	Policy Brief
French	
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Other language	

4. Summary

In India, agricultural risks are exacerbated by a variety of factors, ranging from weather variability, frequent natural disasters, uncertainties in yields and prices, weak rural infrastructure, imperfect markets and inadequate and sub-optimal financial services. These factors not only endanger the livelihood and incomes of small farmers but also undermine the viability of the agriculture sector and its potential to become a part of the solution to the problem of the endemic poverty of farmers.

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In addition, it illustrates a serious effort of adaptive policymaking by using an iterative approach in the experiences of piloting innovative risk management tools.

5. Date

July 2008

6. Author(s)

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7. Module type

☒ **Thematic overview**
☐ **Conceptual and technical materials**

	☐ Analytical tools ☐ Applied materials ☐ Complementary resources
8. Topics covered by the module	☐ Agriculture in the macroeconomic context ☒ Agricultural and sub-sectoral policies ☐ Agro-industry and food chain policies ☒ Environment and sustainability ☒ Institutional and organizational development ☐ Investment planning and policies ☒ Poverty and food security ☐ Regional integration and international trade ☒ Rural Development
9. Subtopics covered by the module	Disaster management, price policy Weather based insurance, contract farming, input subsidies, credit
10. Training path	
11. Keywords	Risk management, Climate adaptation, Disaster management, price policy Weather based insurance, contract farming, input subsidies, credit