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TRAINING COURSE ON SITE-SPECIFIC SLM FOR THE SAVANNAH BELT OF NORTHERN NIGERIA

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Catalyzing Adoption of Agricultural Technologies

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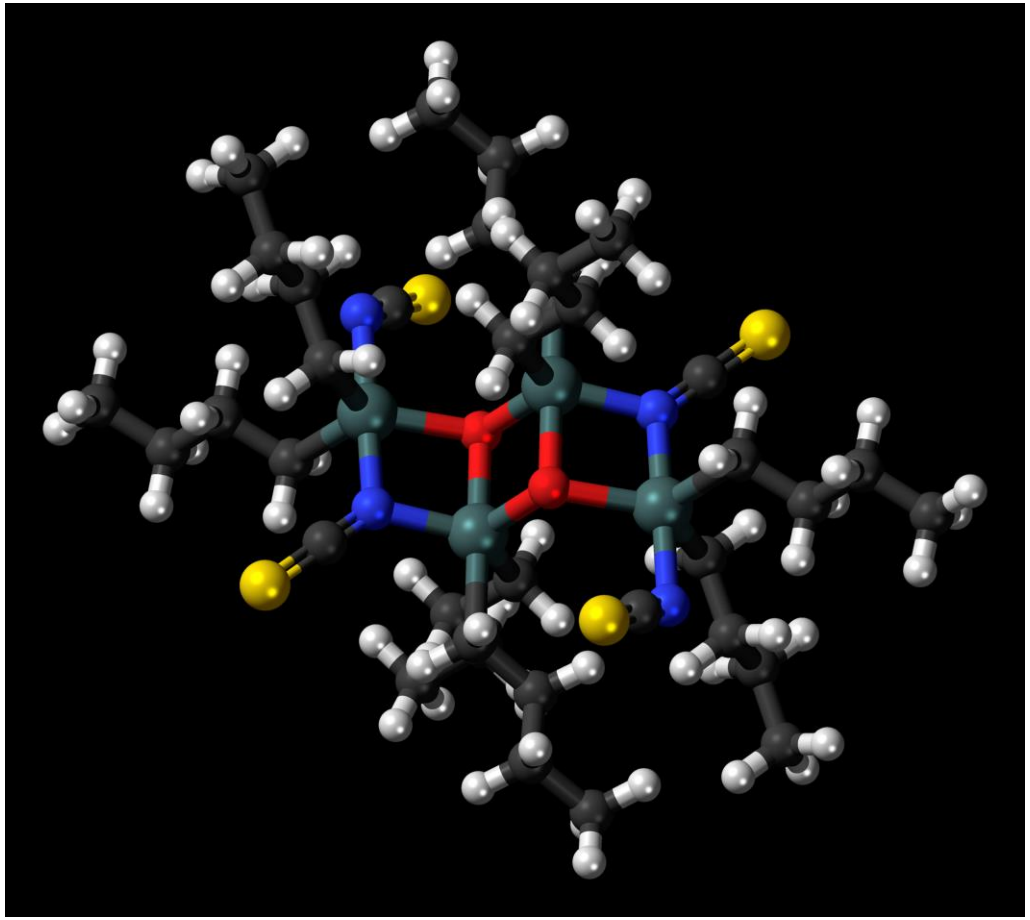
Catalyzing Adoption of Agricultural Technologies

- What do we mean by catalyzing? And why do we need to catalyze it?
  - It is not a natural occurrence….. It doesn't happen automatically
  - Change is possible but often difficult – especially among farmers –
  - And what we are aiming for is not just adoption but adaptive management – resilience to CC --- dynamic nature
  - It does not end with the biophysical but also depends on cultural, the economical, etc.
  - So how do we make it more likely



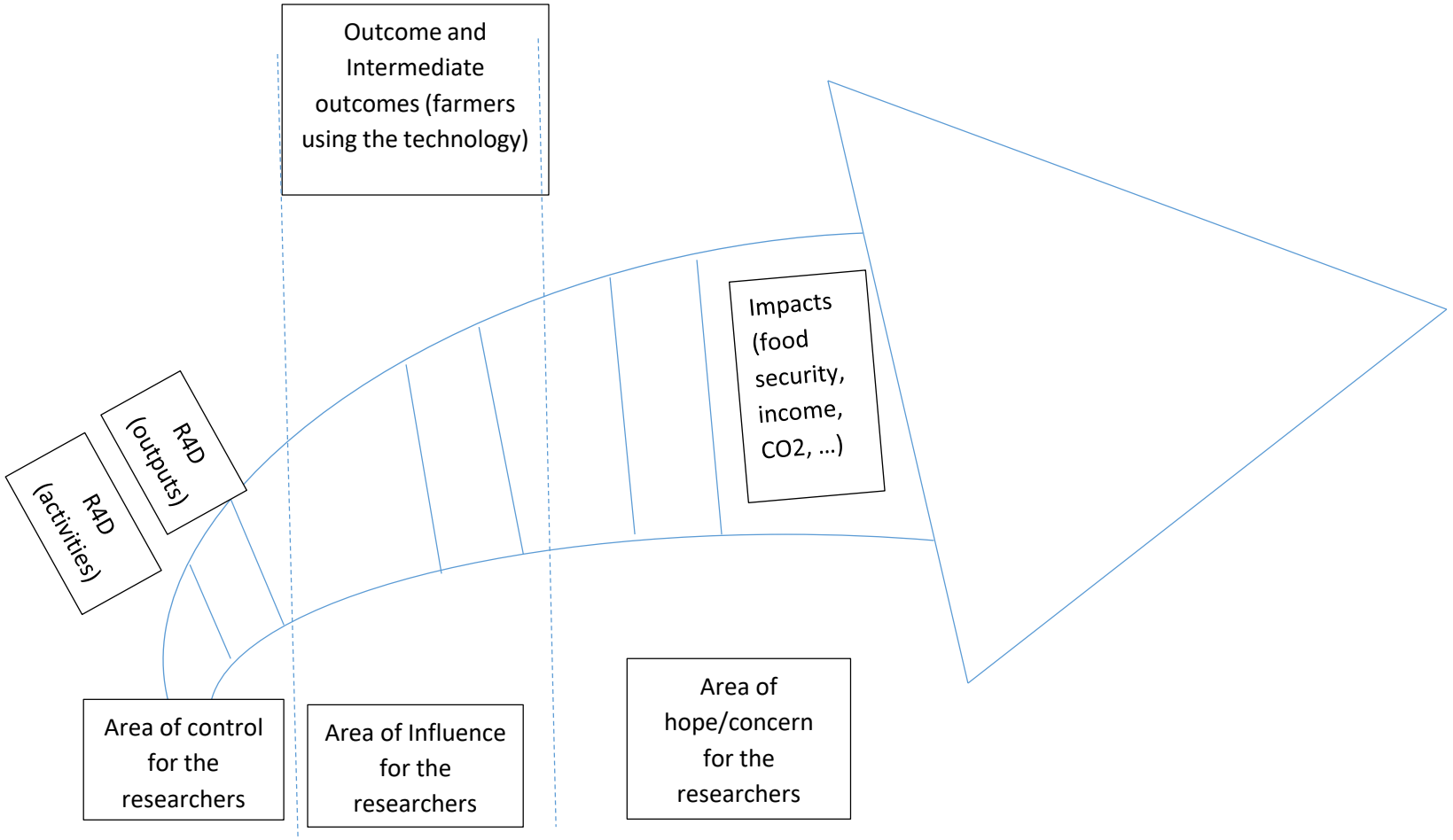
Adoption of Agricultural Technologies

- What do we mean by adoption?
  - The use of a technology
  - The major medium to achieve our impact
- Now needed more than ever
- Often easier said than done
- Many technologies out there but adoption not as forthcoming
- Why? And what can we do to increase the chances of technology adoption?

Adoption is a Process

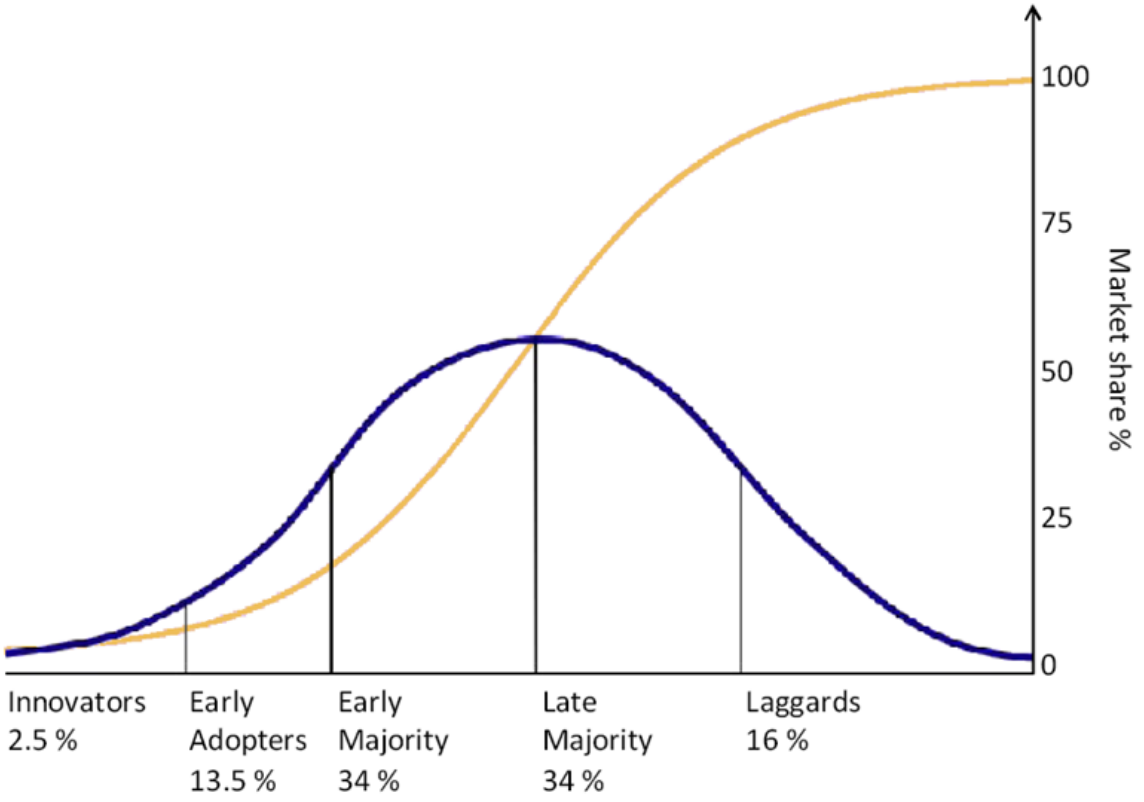
Stage	Definition
Knowledge	In this stage the individual is first exposed to an innovation, but lacks information about the innovation. During this stage the individual has not yet been inspired to find out more information about the innovation.
Persuasion	In this stage the individual is interested in the innovation and actively seeks related information/detail.
Decision	In this stage the individual takes the **concept of the change** and weighs the advantages/disadvantages of using the innovation and decides whether to adopt or reject the innovation.
Implementation	In this stage the individual employs the innovation to a varying degree depending on the situation. During this stage the individual also determines the usefulness of the innovation and may search for further information about it.
Confirmation	In this stage the individual finalizes his/her decision to continue using the innovation.

Technology Adoption



Source: adapted from David Swete Kelly.

Roger's Diffusion Curve



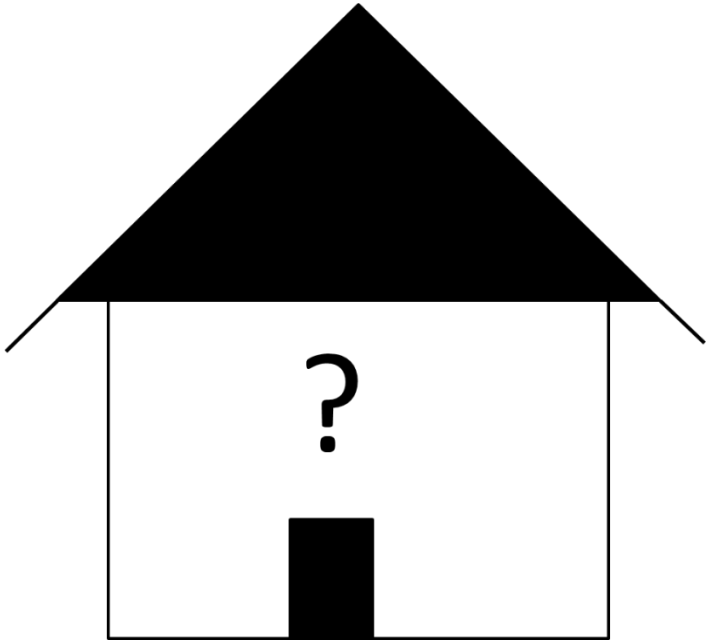
Source: Roger (1962)

Challenges to Technology Adoption

- Social Factors
- Personal Factors
- Situational Factors

Challenges to Technology Adoption
Social Factors

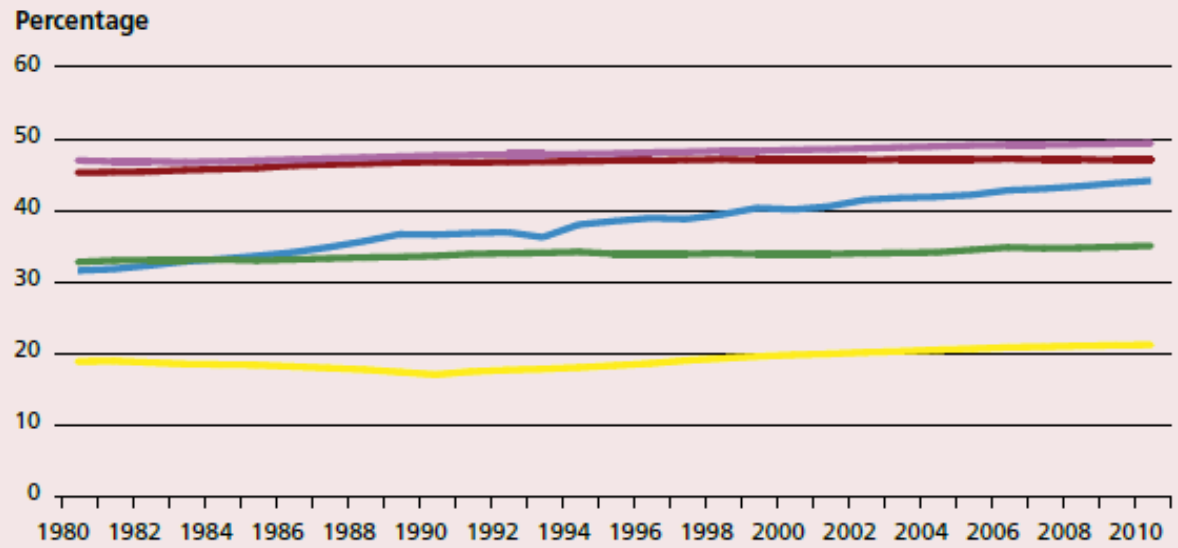
- Value systems, local leadership, social contacts, culture and religion, etc.
- Misconceptions in targeting for technology Adoption (eg. Communities and households)
  - Project – targets more than 700,000 hhs (%age of men and women)
  - We lose a lot of information by assuming that men and women have the same access, ability, and time
  - A gendered perspective - a systemic way of looking at and understanding gender issues -Identifies the gender based differences, relations, and interactions within and outside the household
  - Who does what? When? How? Where? for whom? Who decides on what? Which men? Which women? Which youth? Which tribe? etc.
  - Takes social differentiations into account
  - Investigating, *not assuming*, the social construction of gender in a given context
  - Collecting sex and age disaggregated data



Why Does Gender Matter?

- On average 47% of the world's farmers are women (FAO 2011)

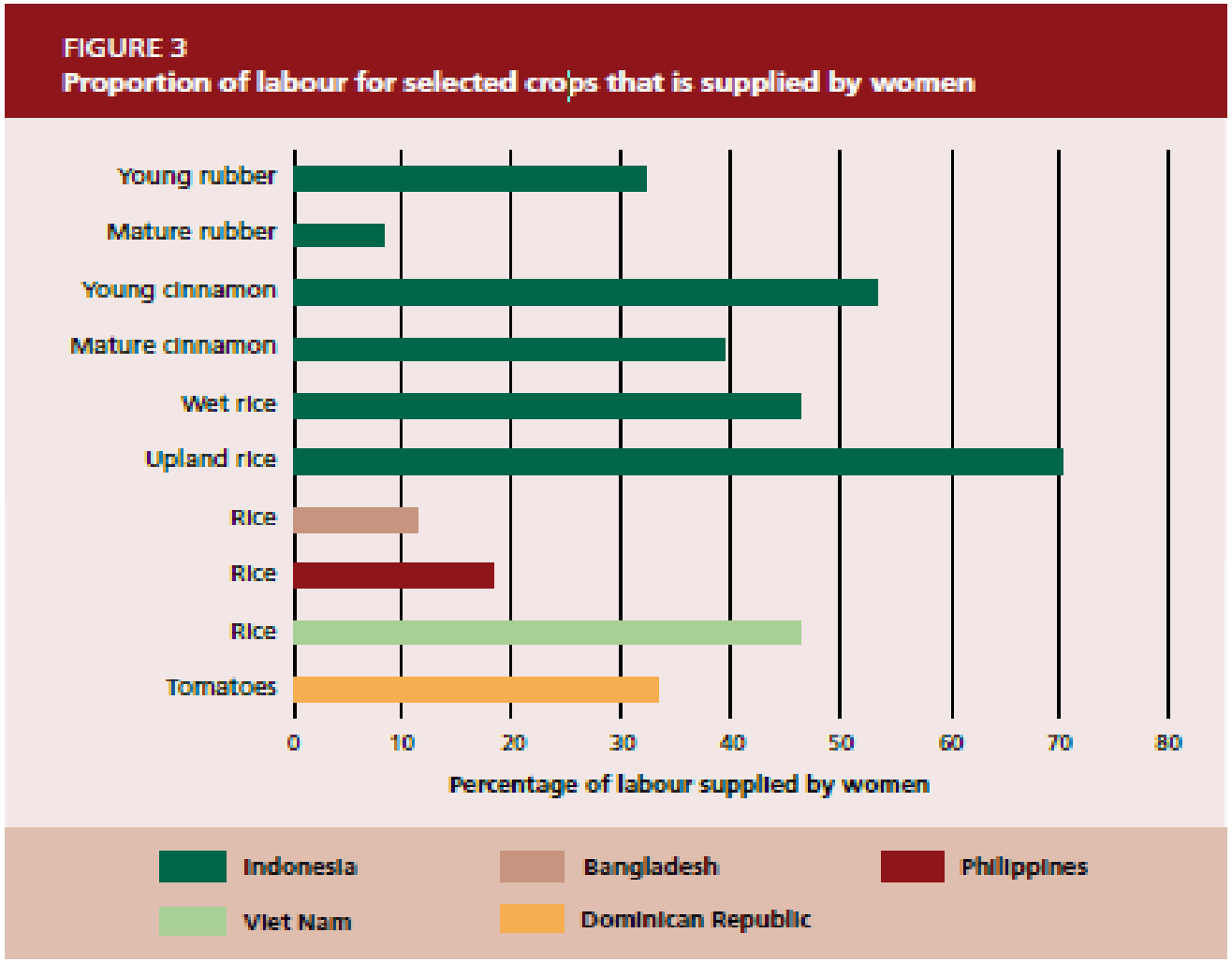
FIGURE 1
Female share of the agricultural labour force



Note: The female share of the agricultural labour force is calculated as the total number of women economically active in agriculture divided by the total population economically active in agriculture. Regional averages are weighted by population.

Source: FAO, 2010b.

Women's Labor Input in Selected Crops



Challenges to Adoption

Personal and Situational Factors

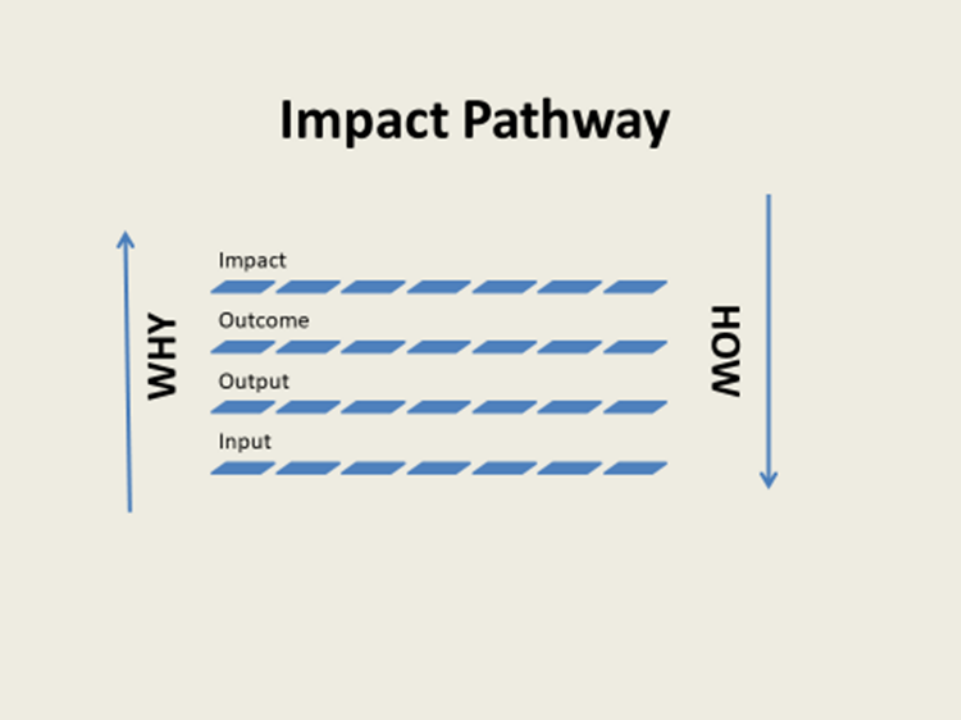
- Personal Factors
  - Age, education, sex, value and attitude, wealth status, social class, perception – eg. risk averse Vs pioneer, etc.
- Situational Factors
  - Farm income: sole source vs diversified sources ---- degree of associated risk – WTF (*Kazak)*
  - Farm size: small vs large, subsistence vs commercial
  - Tenure status: e.g. rented Vs own
  - Source of information: frequency, source, delivery mechanism (type, place…), etc. - *Extension study – issue of trust*
  - Inherent properties of the technology of practice

Challenges to Adoption (Contd.)

Inherent properties of the technology/practice

1. Complexity – hard and software
2. Affordability
3. Net returns – including risks and marketability, private vs social benefits (*Kazak*)
4. Compatibility (farm, farmer, environmental, etc.)
5. Divisibility (trialability)
6. Communicability and observability

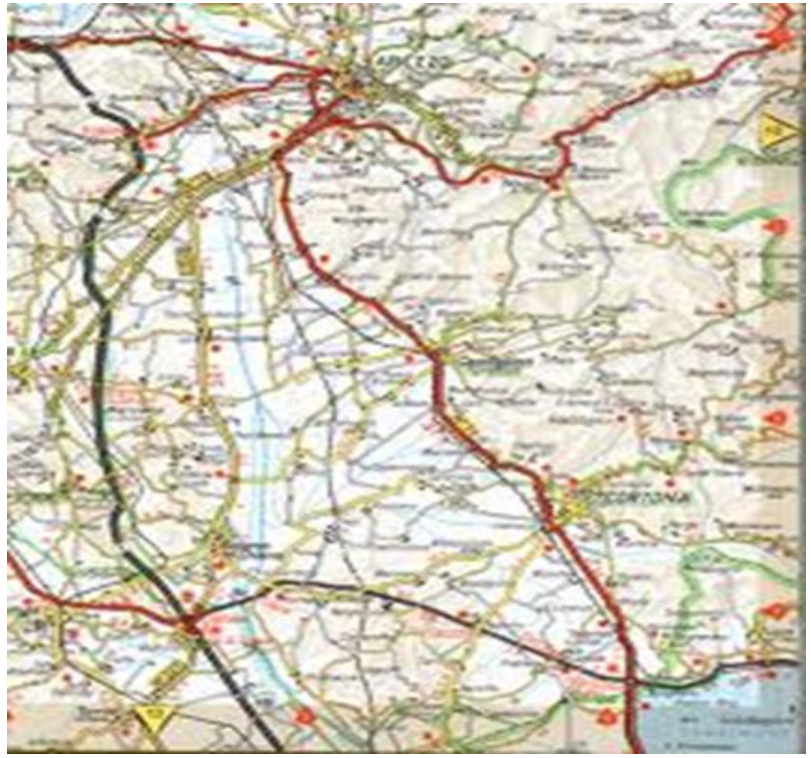
Clear Impact Pathway



- Technology targeting based on clearly defined boundary conditions: what can be done within available time frame, staff, socio-economic and cultural conditions on the ground, budget limitations, etc.
- Realistic activity based workplan with indicators or milestones to be achieved

Clear Impact Pathway → Theory or Change

- An **explicit** theory of how a project will result in the intended impact - built around the IP
- ToC **describes** and **explains** the causal linkages (why, underlying assumptions, partnerships, and pathways etc.) through which it is expected that an intervention will bring about the desired results.
- Closer look at the **factors that influence** the achievement of each milestone including **factors outside** your influence
- Includes a number of **hypotheses on what needs to happen** for the project output to result in the final impact



Technology Dissemination Pathways (TDP)

What do we mean by a technology dissemination pathway?

- More than one alternative – optimal?
- ToC for the whole project; TDP – for specific technology
- Includes sets of strategies to:
  - Match technoly/ies with target area/population
  - Ensure availability and equitable access to the right information (type, packaging, and delivery)
  - Provide extension services (pluralistic extension system)
  - Facilitate required institutional support (financial, inputs, etc.)
  - Adequate technology tracking system

Facilitate Affordability (Dissemination Pathways Contd.)

Case of the stove project in Ethiopia

- Alarming rates of deforestation, increased drudgery for women, increasing health risk for women and children, increasing use of crop residues and animal dung as fuel for cooking
- walk about 5 hours to collect firewood twice a week or more, depending on the family size, and collect cow dung to make fuel pates
- The ***Mirt*** stove is proven to **reduce a household's demand for firewood by up to 50%,** and has an **energy efficiency gain of about 23-24%** relative to the traditional stove
- Adoption was very low and in our watershed zero – main reason price (8 usd/stove = 150 birr)

Facilitate Affordability (Dissemination Pathways Contd.)

Case of the stove project in Ethiopia (Contd.)

- ADA: identified a group of landless women in the community
- District level bureau of social and mechanization services provided training
- Made available for sale at full price or through "stove-for-work" program – NRM in their watershed
  - Availability and accessibility
  - Community mobilization - NRM in their watershed
- Producers mobilized into women entrepreneurs association, given space in the district – themselves promoters
- Over 800 stoves produced and distributed

Facilitate Affordability (Dissemination Pathways Contd.)

Case of the greywater project in Jordan

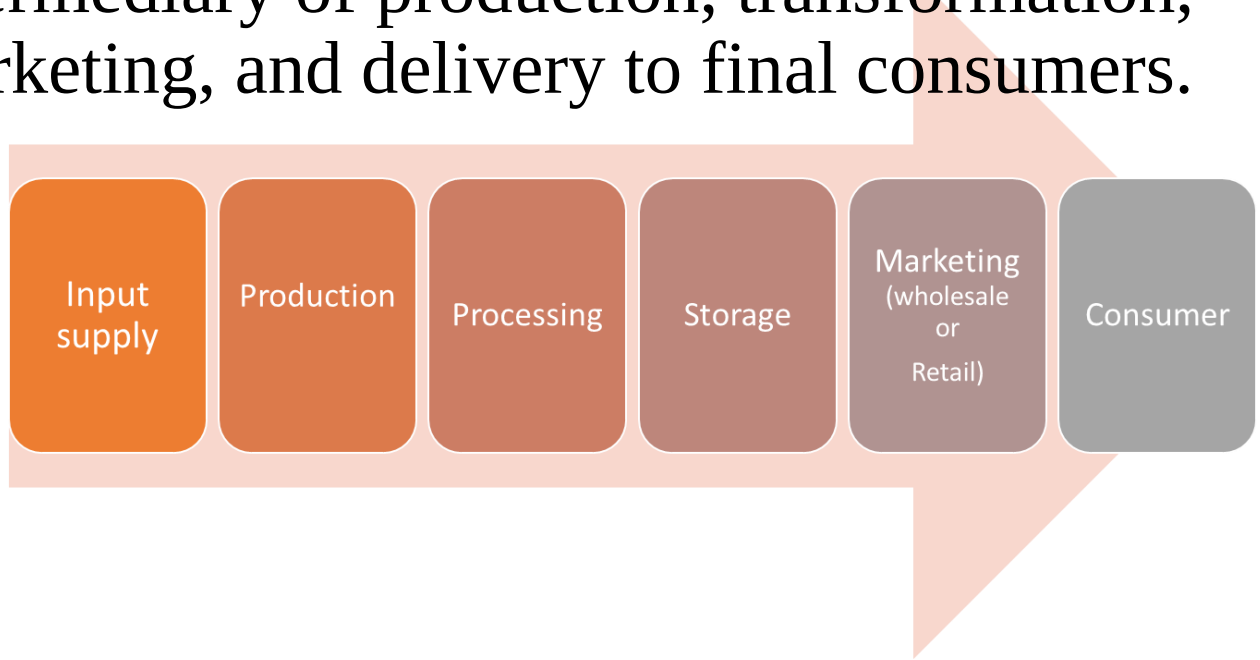
- Increase in water demand
- Household grey water filtration system
- Two dissemination pathways (NCARE Vs MC - International NGO)

Strategy	NCARE	MC/CBO
Selection criteria	Hh size, garden, willingness, not connected to the municipal sewer system, fruiting olives,	willingness, not connected to the municipal sewer system, fruiting olives,
Awareness	Individual communication	Through established CBOs
Targeted potential adopters	HH, main point of contact - women	HH, Main point of contact – members - men
Cost of adoption	Fully covered by NCARE	Loan facilitated by the CBO
Training	Initial, on-the-job, and throughout implementation	Head of CBO and some hhs
Technology tracking	Continuous and involving hh	Almost none
Sustainability	+/-	Almost all dis-adopted within 1-2 years

Dissemination Pathways Contd.

Value Chains

- A **value chain** describes the full sequence of activities (functions) required to bring a product or service from conception, through the intermediary of production, transformation, marketing, and delivery to final consumers.



Gender in Value Chain Analysis

- It does not end with farming and yield
- Both men and women participate along the entire value chain contributing as suppliers, producers, distributors, processors, traders, and consumers.
- Should look for opportunities to increase the competitiveness of value chains by reducing the inefficiencies in the system

Climate Change Adaptation and Agribusiness Support Program (CASP)

- What are your criteria to select the right technology for your state?
- What are the strategies that you plan to use to disseminate and popularizes these technologies?
  - Opportunities, constraints, and factors that require due considerations?
  - What incentives and/or alternatives can you think of?
- What disincentive mechanisms exist to discourage farmers from adopting them? And how do you plan to overcome those?

Climate Change Adaptation and Agribusiness Support Program (CASP)

- Goal: *Build resilience of communities in the seven states to CC through adoption of climate smart technologies*
- Who are the target population? Men and women? And what are the conditions that need to be made available for adoption to take place
- What are the potential bottle necks for adoption considering that environmental change not as quickly forthcoming – observability, divisibility, affordability, and complexity
    - Social, personal, situational -eg. complexities associated with existing bio-physical conditions (eg. soil type, etc.) and land suitability mapping,
    - land tenure and size, governance of communal land,
    - availability of labor and other inputs and associated fluctuations in price, availability of service delivery system (eg. tractors, raised bed – adapted and low cost) availability and accessibility,
    - criteria for membership in CBOs,
    - policies on water sharing,
    - crop preferences – what are the available options, and access to improved varieties
    - opportunities for improving the value chain and market outlets,
    - what are the alternatives offered in lieu of the practices they give up? Eg. deforestation and stoves,
    - alternative income generating opportunities to reduce pressure on fragile resources?
    - Equitable access to information, inputs, credit, technology, technical advise and support, marketing, and benefits along the value chain?
    - What kind of partners should you bring on board to catalyze adoption? (Pluralistic extension system)
    - Adaptation to CC – requires good predictive power – how and in what form will farmers access such information?
    - cost of adoption and associated risks for the farmer and the community at large… may not have monetary value but could have cultural or religious value, time, etc…. And anticipated gain at the personal, hh, and community level
- A good understanding of these issues will help you choose the right technology and the right dissemination pathways
- What is the plan to out-scale it? Realistic plan – how many in how long? What kind of support will be available to ensure such large scale adoption? (financial, technical, institutional, policy or political, etc.) and to what extent can the project influence this?

Thank you