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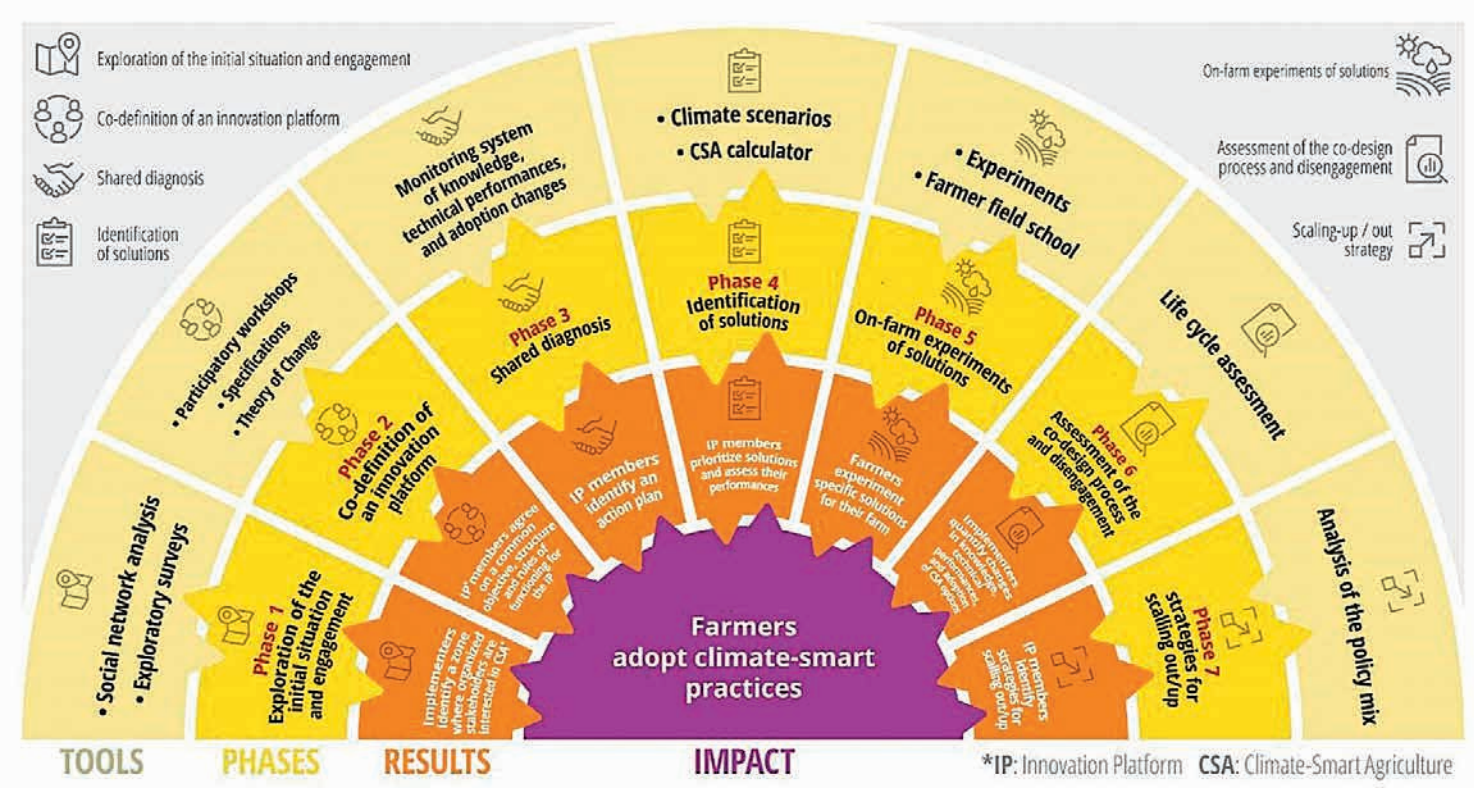
Participatory design of new production systems with better ecosystem service and climate adaptation performances in Colombia and Honduras

Although agroecology and climate-smart agriculture are generally presented as opposed concepts, designing agroecological farming systems can generate synergies between the three pillars of climate-smart agriculture: (i) food security; (ii) adaptation to climate change; and (iii) mitigation of greenhouse gas emissions. This implies tailoring existing frameworks to codesign agroecological farming systems. **A study conducted in Cauca (Colombia) and (Lempira) Honduras explored the specific features of such a framework involving seven phases:**

1. Identification of an area where the community and/or local stakeholders have an interest in developing practices to tackle climate change.
2. Identified stakeholders agree on specific objectives of the platform and how it will operate. In our study sites, the platforms involved organizations or farmers, NGOs that acted as facilitators, public institution representatives and scientists.
3. Platform members characterize the strengths and weaknesses of their farms in order to draw up an action plan combining trials, workshops and exchanges. The project also includes a system for monitoring the project outputs and outcomes.
4. Platform members define the technical and organizational options they want to explore based on agroecological principles (particularly diversity, recycling, efficiency and resilience). A calculator is used to *ex-ante* assess outcomes under the three CSA pillars. Solutions such as vegetable home gardens with drip irrigation, a solar dryer for banana co-products, improved drought-tolerant bean, sorghum and maize varieties were selected to help diversify the production system and enhance food security on farms growing cash crops. Compost, water harvesting tanks and biopesticides were selected to curb chemical agricultural input use.
5. Platform members test the identified solutions on their farms. At both sites, 60 farmers tested portfolios of selected solutions.
6. Data generated by the monitoring system defined in phase 3 are used to validate the ability of the process to meet the agreed objectives and to decide on whether it is worthwhile continuing with a new cycle of the process (restarting at phase 3). We showed positive changes in farmers' knowledge on concepts such as climate change, along with a positive process of adoption of tested practices since farmers increased the initial experimental area or invested their own resources to continue implementing them.
7. Public policies and enabling conditions are analyzed to identify scaling mechanisms (programs, subsidies, incentives, etc.) of the options tested within the platforms.



▲ ***Phases of the codesign process.*** *Source: Andrieu* et al. *(2019)*

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For further information

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