

Thematic Theme

Integrated Agricultural Systems for the Poor and Vulnerable

Starting from the users: **“IN THE BEGINNING ...”**

1. In the past CGIAR has in most cases defined itself around its **products**, rather than around the **users**. It presents itself as “a solution looking for a problem”.
2. Seminal strategic CGIAR goals were stated as **breeding, agronomy** and **economics**.
3. However, we need to **start at the user’s domain**, not that of do-ers or funders.
4. If “**subsidiarity**” means anything in this process, it means “decision-making driven from **farmers’ reality**”, their **agro-ecosystem**.
5. The start of the circle Colin Chartres showed is **the farmer in her/his agro-ecosystem.**

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Rationale: AGRO-ECOSYSTEM APPROACH: “WHO NEEDS WHAT NOW?!”

1. Poor and vulnerable people live in farming, herding, pastoral, fishing and/or agro-forestry communities and depend on **diverse agricultural systems** for their food security and livelihoods (e.g. **dry ecosystem; humid tropics ecosystem; and coastal ecosystem and aquatic resources**).
2. These systems use a **mixture** of diverse and important food crops, fodder crops, rangeland and pasture species, trees, livestock and fish and are finely adapted to agro-ecological conditions.
3. **Combinations** of improved agricultural, livestock, fishery and agro-forestry production with improved access to resources and markets will need to be integrated with more sustainable management of natural resources and supported by appropriate policy and institutional changes.
4. **Think BIG = think AGRO-ECOSYSTEM.**

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Objectives: **“WHAT ARE WE AIMING FOR”**

1. **Develop resilient and viable integrated production systems for enhancing food security and environmental sustainability.**
2. **Sustainable intensification and diversification of production systems for sustainable productivity growth and risk management**
3. **Diversify rural livelihoods for income increase, and household food and nutritional security.**

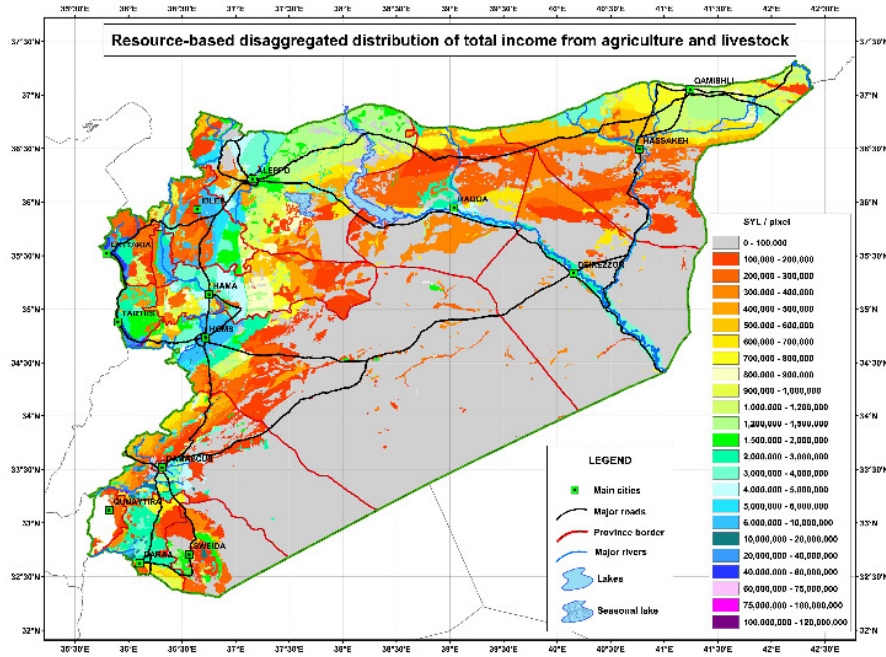
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Targeting: “WHO AND WHAT ARE WHERE?”

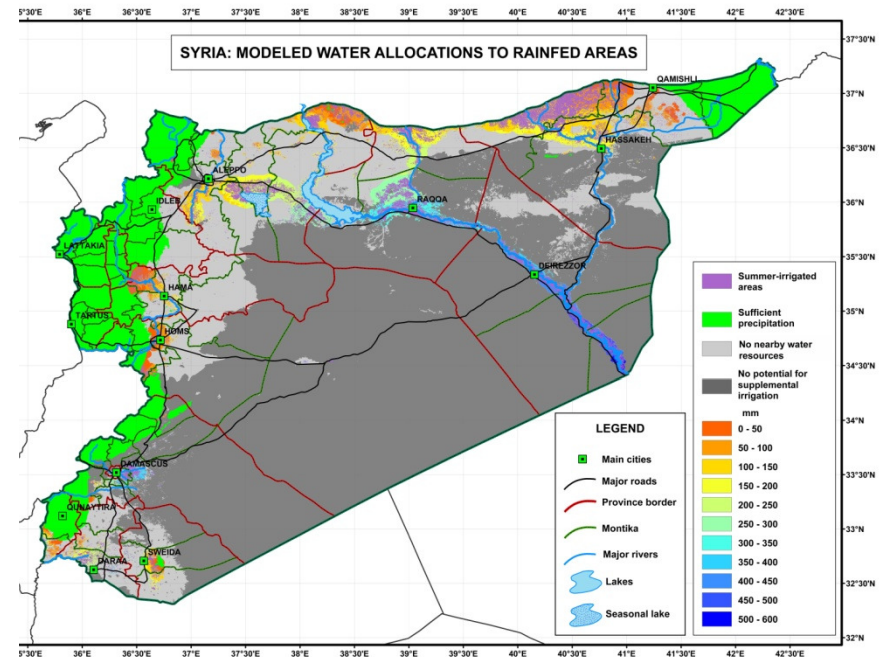
1. **Agro-ecosystem mapping** (e.g. land-use, soil characteristics, production watersheds) to identify major areas of potential commonalities in production systems, with potential similar solutions (with Theme 5). = “IPG ex-ante mapping”
2. **Population and poverty mapping**, to allow targeting of the most vulnerable first (with Theme 2).
3. **Climate change mapping**, to especially target for future production system, allowing e.g. crop breeding to target 10-15 years into the future (with Theme 7).
4. **Baseline socio-economic surveys** (with Theme 2)
5. **Rapid rural appraisals** and **household surveys** (with Theme 2).
6. **Crop/livestock adaptation zone mapping.**

The above targeting allows prioritizing of the strategy and work-plans.

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Poverty mapping



Supplemental irrigation effectiveness

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Impact pathway: **“FROM HERE TO THERE?”**

1. **Community-based consultation** on needs and requirements
 - Subsistence farmers and farmers organization representatives (women emphasis)
 - Baseline studies including re-iterative regional GFAR fora input
2. **Participatory interaction** with NARS researchers and policy makers
3. **Problem description** and **review of potential solutions**, including **market potential**
4. **Fund raising** (various sources)
5. **Inception workshop** of funded project **with all stakeholders**
 - Farmers organization representatives
 - NARS researchers and policy makers
 - Consortium Theme bio-physical and socio-economic researchers
 - Other partners (donors, funders, processors, consumers)
6. **Research-for-development execution** and **M&E** (with Theme 2)
7. **On-farm trials** and wider testing/verification of technologies **with communities**
8. **Securing market linkages and transition of subsistence to commercial enterprise, so the farming business becomes profitable**
9. **Official launching** of technologies and relevant **participatory up-scaling**

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Output categories: **“CATEGORIES”**

1. **More resilient and profitable rangeland/crop/livestock integrated production systems developed.**
2. **Viable and affordable options for livelihood diversification verified, adapted and promoted**
3. **Sustainable and optimal options for diversifying and intensifying production systems developed and promoted**

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Output categories: **“RESILIENT AGRO-ECOSYSTEMS”**

1. **Cereal-legume systems** that increase soil organic matter and health, while providing food.
2. **Crop/livestock systems** that provide food and feed in balance.
3. **Livestock/rangeland systems** that provide feed and prevent land degradation.
4. **Crop/forestry systems** that provide food, income, while soils are maintained
5. **High value crop systems** (e.g. fruits, vegetables (with AVRDC))
6. **Home garden systems** of high value crops.
7. **Conservation agriculture** promoted where relevant.
8. **Fish production systems** that maintain water quality.

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Output categories: **“APPROPRIATE PLANT AND LIVESTOCK SPECIES AND VARIETIES”**

1. **Biodiversity surveys** of indigenous genetic resources, followed by targeted collection missions.
2. **New crop/livestock species identified** for testing. New fish breed with high-value commercial potential.
3. **New crop varieties and livestock breeds created** in integrated breeding programs, using novel genetic diversity, modern breeding tools (e.g. marker-assisted and genome-based selection, GMOs). E.g drought tolerant pigeonpea.
4. **Farmer involvement in participatory breeding** and/or participatory variety selection, as appropriate. E.g. women farmers select weed-surpressing common bean germplasm.
5. **Gender-related** crop/livestock issues on varieties and species taken into account. E.g. sorghum with shorter cooking time is identified with women community.
6. **Public and private seed production systems** at the national/regional/local levels to promote rapid technology distribution and adoption.

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Output categories: **“SUPPORTIVE AND EMPOWERING POLICIES AND INSTITUTION”**

1. **Effective policies that enhance** challenged integrated agro-ecosystems, terms of promotion and protection
2. **Institutional alternatives that underpin** the adoption of new technologies.

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Output categories: **“SIGNIFICANT PARTNERSHIPS”**

1. **Enhanced capacity** of NARS, sub-regional research groups and other partners, including private enterprise, to jointly generate research outputs.
2. **Partnerships with and among NARS**, sub-regional research groups, NGOs, CSOs and other partners, including private enterprise, to jointly disseminate research outputs.
3. **Partnerships to up/outscale** outcomes across the region, country, etc.
4. **Engagements with land/water management authorities** at international, regional, river basin, watershed, community and local levels (with MP5).

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Comparative advantage: “1+1=3”

1. Convene research on integrated multi-component agro-ecosystems, that cut **across national boundaries** (e.g. transboundary agricultural water use issues; with MP5). E.g. Nile, Euphrates.
2. **Structured around major system constraints**, generating completely new opportunities (such as new markets and other potential links to MP2). E.g. high value crops. E.g. fruits, herbal, medicinal and aromatic plants, new livestock and fish breeds.
3. Opportunities for **IPG potential are easier outscaled** with partners that share agro-ecosystems. E.g. globalize conservation agriculture.
4. Focused on **most resource-poor farmers and vulnerable areas**, promoting **regionally coordinated approaches**. (e.g. dry ecosystem; humid tropics ecosystem; and coastal ecosystem and aquatic resources)

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Partners: **“THE TEAM”**

1. **Research partners will contribute based on criteria:** need, technical know-how, reliability of delivery, participatory interaction mode, can-do attitude, commitment to the cause, through a community-based mode, accountability and transparency.
2. **Partners include:**
 - a. NARS.
 - b. Farmers.
 - c. Universities.
 - d. Farmers cooperative associations.
 - e. Private sector .
 - f. NGOs
 - g. Processors
 - h. Customer groups
 - i. Special interest groups (eco-tourism)

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WHAT IS NEW?

1. New areas of research.
 1. **Agro-ecosystem** approach requires progress in **social, institutional and organizational research**, and promotion of **community-based, farmer-collaborative system approaches**.
 2. Will take advantage of innovations to improve agro-ecosystems with **novel science, including breeding, agronomy, socio-economics, and especially interactions**.
 3. **Diversification/resilience balance** will be studied, and **trade-off between intensification and natural resource conservation**, and **market linkages**.
2. New integration. Systems approach taken will develop **new integration across key agriculture sectors**. Search for **enhanced synergies between the various crops, livestock, rangeland and fishery components**. It will **strengthen integration** with all actors, including across the portfolio.
3. New partnerships. **Links with famers, researchers, ARIs and private sector with key competencies, policy-makers and local communities**.

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Initial list of focal areas:

- 1. Dry ecosystem**
- 2. Humid tropics ecosystem**
- 3. Coastal ecosystem and aquatic resources**

With sub-levels possible on geographic basis