

Association of International Research and Development Centers for Agriculture

**Supporting smallholder agriculture
within healthy, sustainable and
climate-smart landscapes**

Context



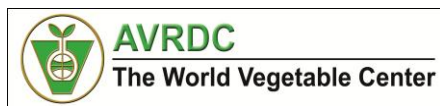
- Increasing demand for 4Fs to satisfy ~9 billion people
- Sustainable intensification - Balancing the imperative to increase yields/outputs whilst securing the long term of the production environment
- Requires innovative system-level approaches to agricultural development



Association of International Research and Development Centers for Agriculture



- A newly-formed alliance with 9 founding members
- Established 2012, launched at GCARD2 in Uruguay
- Focused on improving global food security by supporting smallholder agriculture within healthy, sustainable & climate-smart landscapes
- Combined turn-over in excess of US\$ 200 million p.a.
- >60 member countries comprising >70% of population
- On-going R&D activities in all major geographic regions & ecosystem types



Why AIRCA?

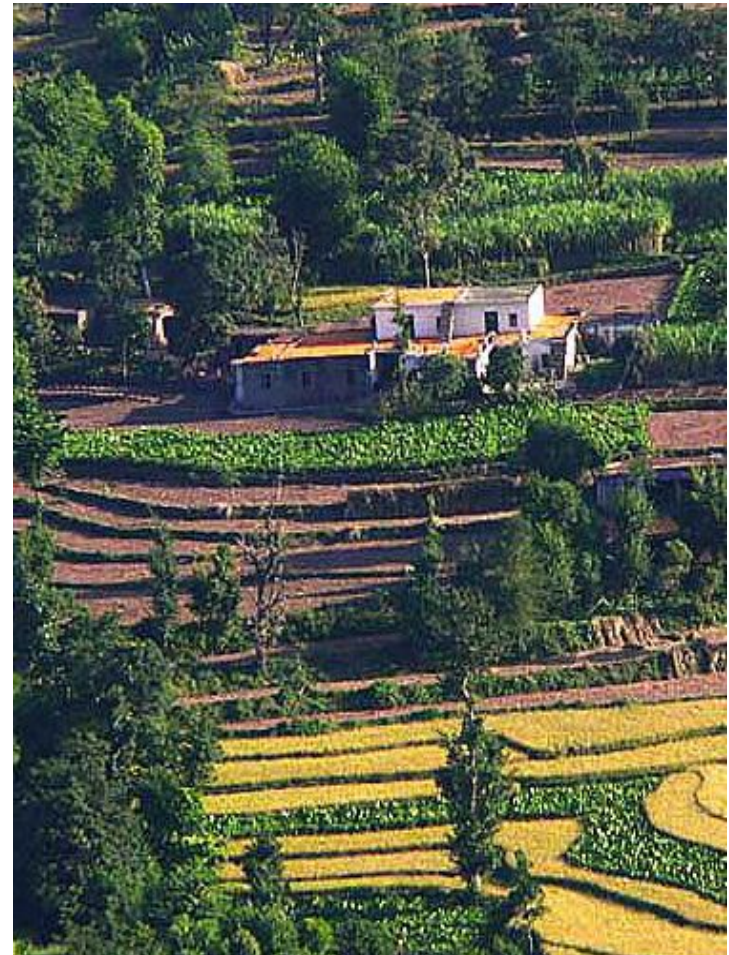


- Need for integrated, multi-centre approaches to provide scale and scope of expertise to tackle landscapes challenges
- Greater influence, visibility and access as a group rather than individually
- Shared approaches and values:
 - ✓ Focus on putting research into use
 - ✓ Member country linkages and mandates
 - ✓ Influence in regional networks and policies
 - ✓ Delivery through partnerships with national, regional and international organisations
 - ✓ Problem and demand driven, not technology push

AIRCA members have



- Expertise across range of **ecosystems** & substantive crop diversity
- Core competencies in **health** of humans, plants, animals & landscapes
- **Integrated & holistic** approaches to solving development problems at scale
- Ability to **respond rapidly & efficiently** in the face of new problems
- **Long-established track record** of working with member-country governments, NARS & the private sector
- **Partnerships** with the CGIAR, FAO etc.



What can we contribute?



- Experience of varied and challenging ecosystems (geography, climate and politics)
- Expertise in a wide range of crops
- Focus on crops of high economic, nutritional and/or cultural value
- Development of metrics (economics and biology)
- Innovative mechanisms for communication, knowledge transfer and capacity building
- Creative strategies to assess outcomes and impact

Intended outcomes



Healthy landscapes - healthy plants, people & animals living in a healthy environment

- **Delivering impact** at the agriculture-environment nexus
- **Concerted effort** with a common vision
- **Holistic approach** to smallholder agriculture & ecosystems
- **Objectives:**
 - ❑ Stronger voice to influence key policy fora
 - ❑ Innovative approaches
 - ❑ Greater impact
 - ❑ Reduced transaction costs



More viable communities



- ***Reducing risk***

- Crop/fertilizer/water mix for better nutrition and yield
- Crop types and practices for resilience to change
- Improved knowledge of and access to markets
- Control of invasive species

- ***Increasing sustainability***

- Lose less to increase output/quality with fewer inputs
- Protection of biodiversity on and off farm
- Management of ecosystem services, practices and use
- Empowerment of rural women

Reduced food insecurity, improved quality of life

Reduced or reversed rural migration

Progress so far



- AIRCA alliance built with no external donor funding to date
- Centres have developed a resource mobilisation strategy in 2013
- Web portal for donors and partners to access information
- 2nd AIRCA DGs meeting held in Dubai (ICBA) during 2013
- Development of a Landscapes White Paper, launch at UNFCCC COP19
- Executive Secretary (Marita Dieling) recruited with support from CIM/GIZ



Deliverables: With additional support



Developing AIRCA concept notes on 3 key landscapes, with an emphasis on partnerships, dissemination and outreach:

- Mapping of current programs & projects across AIRCA centres
- Prioritising problems in smallholder agriculture & agro-ecosystems
- Partnering with existing/on-going initiatives such as the CGIAR CRPs



Landscape 1 – Lake Victoria Basin



- Shared water resource between Burundi, Kenya, Rwanda, Tanzania and Uganda
- Combined population of 130 million, 70% smallholder farmers

Landscape 1- Lake Victoria Situation

- Low agricultural productivity
- Poverty, malnutrition and micronutrient deficiencies
- Dependence on a few primary commodities
- Weak human and institutional capacity
- Population growth pressure on land and water
- Lack of integration across many development efforts
- Soil degradation



Landscape 1- Lake Victoria Proposals

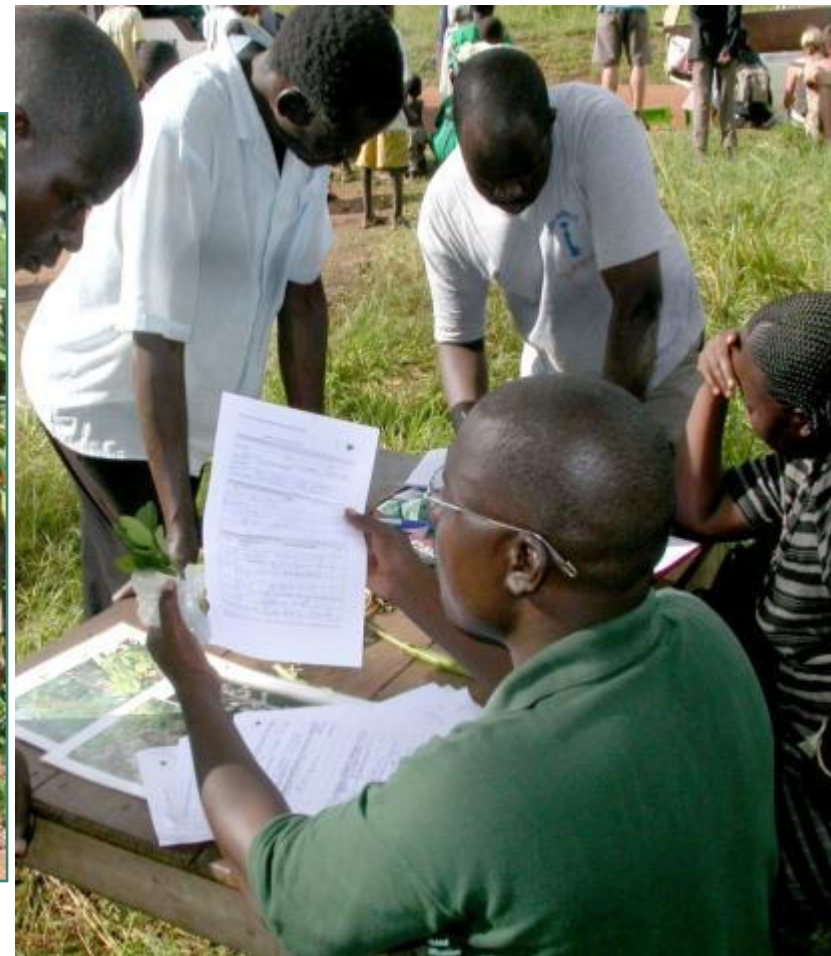


- Large scale sustainable productivity improvements
- Integrated pest and vector management
- Sustainable traditional vegetable production
- Adaptation for resilience to climate and water stress
- Linkage to mobile Agro-advisory and Nutrition initiatives
- Soil fertility restoration and management
- Better plant health systems at national and regional levels
- Better linkages between smallholders and private sector

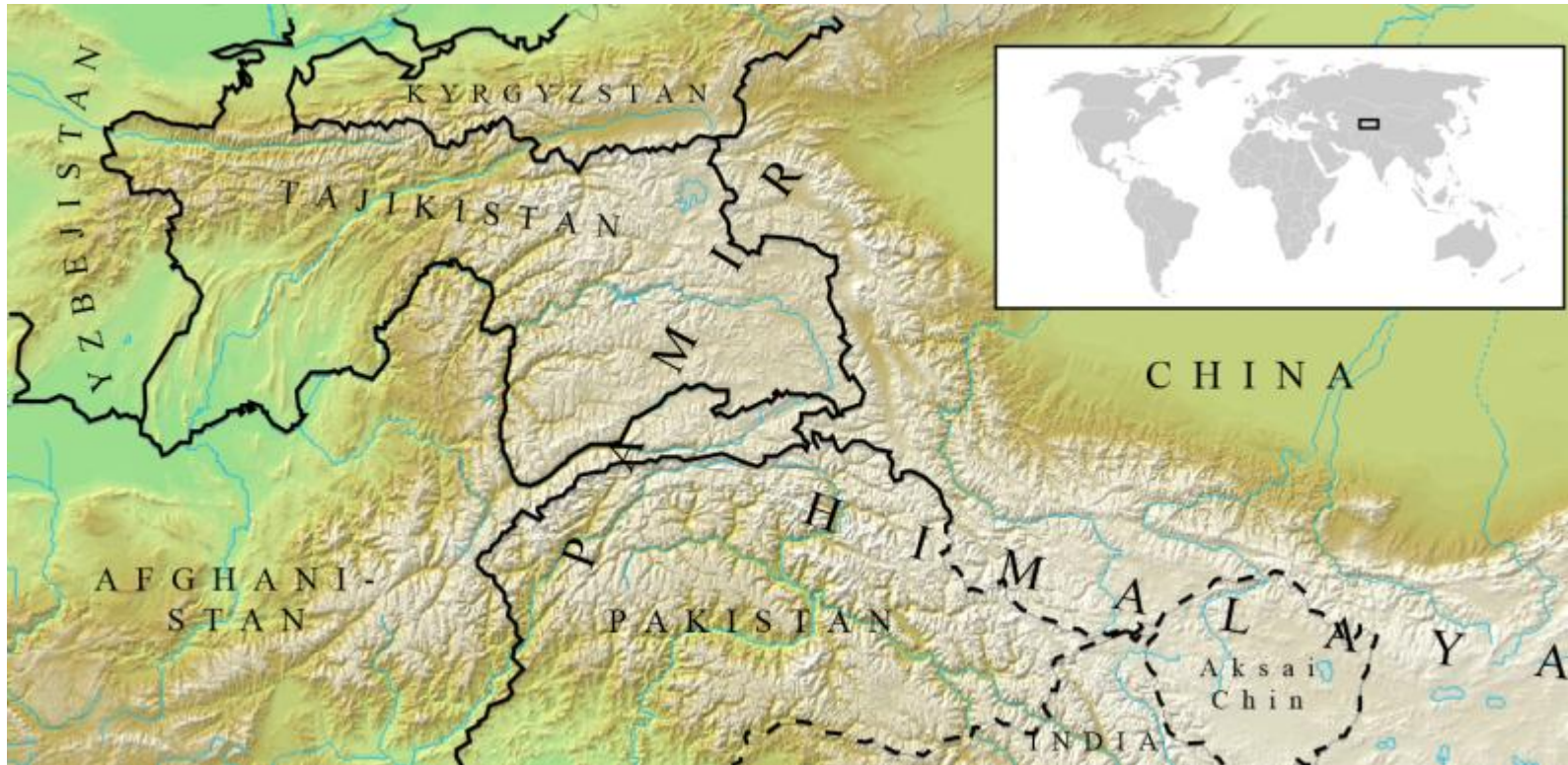
Landscape 1- Lake Victoria Proposals



- Major socio-economic study to understand long term impacts, success factors and limitations



Landscape 2 – Karakorum Pamir



- Cross boundary programme covering Afghanistan, Pakistan, Tajikistan and China
- High valleys, plateaus, steppes and mountains with arid or semi-arid conditions
- Agriculture is typically irrigated and single cropped

Landscape 2 – Karakorum Pamir Situation



- Fragile and often virgin ecosystems
- High vulnerability to climate change and natural disasters
- Growing trend of outward migration
- Increasing livestock population and over-grazing problems
- Salinity poses an increasing problem
- Extreme poverty with limited diversity of livelihood options
- Adoption of non traditional irrigated crops with loss of indigenous varieties

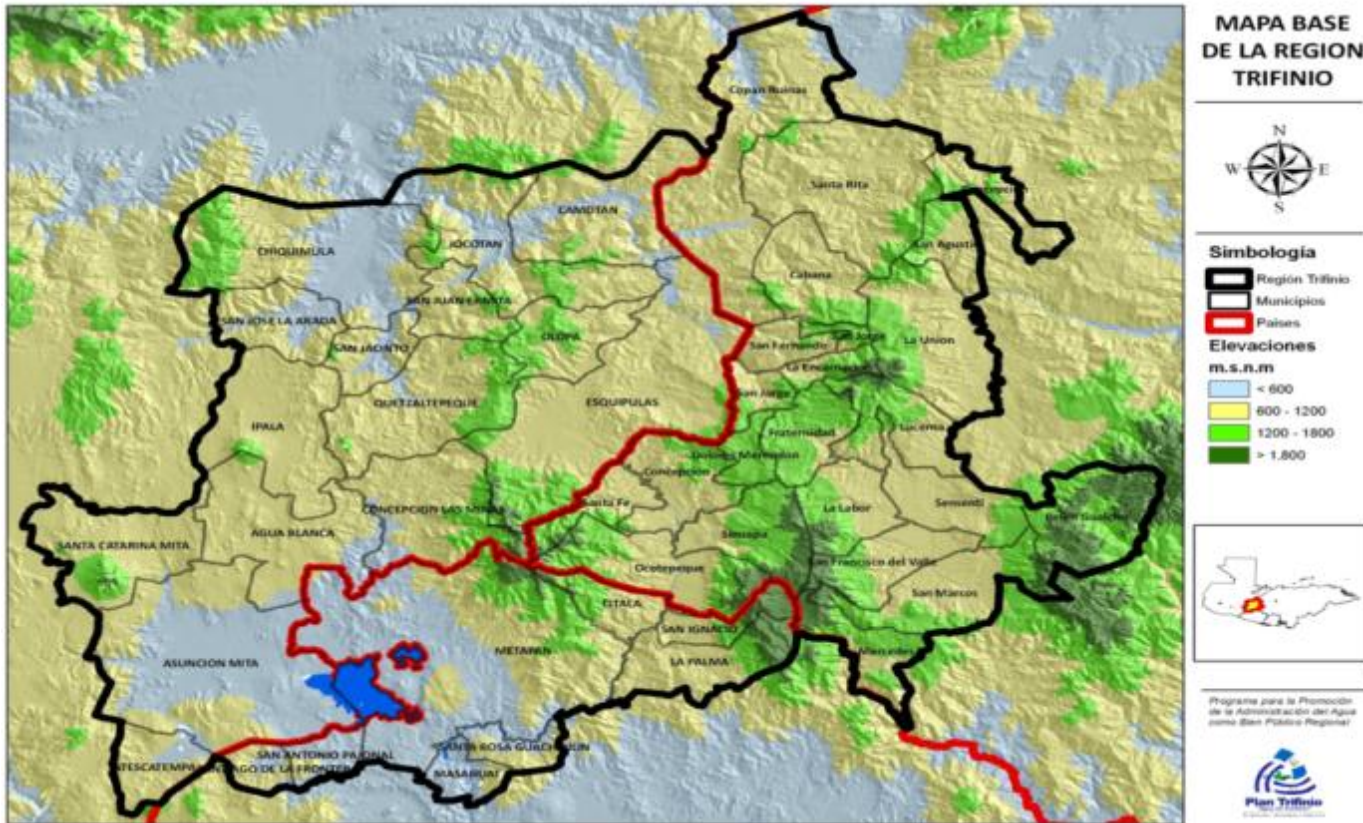


Landscape 2 – Karakorum Pamir Proposals

- Focus on indigenous crops and animals best suited to the region
- Increase adoption of irrigated horticulture
- Develop new agriculture practices to adapt to climate change
- Diversify livelihood options (vegetables, high value crops, wool, meat)
- Remediate saline conditions and adopt of salt tolerant varieties
- Introduce high yielding fuel-wood, fodder and timber species



Landscape 3 - Trifinio



- Cross – border region, shared by Honduras, Guatemala, El Salvador
- High levels of poverty, inequality and food insecurity

Landscape 3 – Trifinio Situation



- Land use pressure – agriculture, tourism, conservation
- Food insecurity and chronic malnutrition
- Yield losses due to pests and diseases
- Over-use of pesticides
- Loss of forests and reduction in water quality
- Vulnerability to climate change
- Important indigenous populations



Landscape 3 – Trifinio Proposals

- New crops and varieties to improve food and nutrition security
- Improve access to alternative value chains and markets
- Develop agroforestry systems (fruit, coffee, bamboo)
- Improve plant health systems and promote IPM approaches
- Improve land use planning to adapt to climate impacts



Programme Delivery



- All programmes delivered with and through national research and extension partners

Landscape	Type	Lead	AIRCA Partners
Lake Victoria Basin	Tropical Lowland, rainfed	icipe	AVRDC, CABI, IFDC, INBAR, CFF, ICBA
Karakorum Pamir	High mountains and valleys, arid or semi-arid	ICIMOD	ICBA, CABI, IFDC, AVRDC, CFF
Trifinio	Tropical forests and mountains	CATIE	AVRDC, CABI, icipe, INBAR

Key collaborations:

- International – FAO, IFAD, GFAR
- CGIAR – CIAT, IITA, Bioversity, ICRAF, CIFOR, IWMI, CIMMYT
- Regional Bodies – ASARECA, CORAF, SADC, APAARI, FONTAGRO, FECAGRO, FARA

Commitments: With large-scale investment



- Demand-driven programmes at the landscape scale, targeting key ecosystems
- Develop ecosystem value metrics
- Improve the economic, as well as biological, sustainability
 - Improve the quantity, quality & value of farm outputs, reduce losses, introduce new varieties
 - Innovative communication approaches, linking to markets, micro-finance and micro-insurance
- Integrated with and complementary to CGIAR CRPs and other programmes from IFAD, FAO, WB

