



# CIRAD's Roadmap for Cotton Research: Initiatives and Projects

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CIRAD - the French agricultural research and international cooperation organization working for the sustainable development of tropical and Mediterranean regions



- Working in collaboration with a wide range of partners in these countries
- Working on 15 tropical value chains

## CIRAD – Cotton Research

- Genetics and breeding
- Entomology/Crop protection
- Agronomy/modelling
- Fiber technology
  
- Tropical livestock systems <> cotton cropping regions
- S&E sciences <> innovations for the transformation of agriculture and food systems in cotton cropping regions

# CIRAD - the French agricultural research and international cooperation organization working for the sustainable development of tropical and Mediterranean regions



1946	Creation of IRCT (French Cotton and Exotic Textiles Research Institute)
1946-1960	French cotton research takes off - Research transforming cotton growing and contributing to rural development in the French colonies
1960-1970	Expansion - IRCT asserts its scientific vocation and expands its activities
1970	Creation of GERDAT – Grouping of 9 tropical agricultural research institutes
1984	GERDAT becomes CIRAD - Public Industrial and Commercial Establishment
1992	Creation of the CIRAD Annual Crops Department and the " Smallholder Cotton Growing " program (CIRAD'S Cotton Program)
2006	New organization of CIRAD into Research Units
2023	10-year Roadmap for Cotton Research at CIRAD (2023-2033)

## CIRAD's Roadmap for Cotton Research:



- Assessment of the state of play of CIRAD's cotton activities over the last 5 years (2017-2022):
  - Human resources
  - Publications
  - Partnerships
  - Projects/Funding
  - SWOT Analysis
  
- Define CIRAD's cotton research strategy for the next 10 years (2023-2033)
  - Identify present and future challenges facing the cotton commodity chain
  - Pinpoint ambitions to frame CIRAD's research activities

# CIRAD's 4 Ambitions for Cotton Research

## 1 - Cropping

**Adapt cropping practices to climate change and reduce their environmental impact**

**Diagnostic  
Agro-ecology  
Varieties  
Innovations**

## 2 - Profitability

**Make African cotton more profitable and competitive**

**Plant breeding  
Quality  
Identity  
Mechanization**

## 3 - Actors

**Implement concerted approaches and build capacity among players in African cotton chains**

**Mutualization  
Training  
Participation  
Prospective**

## 4 - Territories

**Position African cotton chains better on a territory scale**

**Interactions  
Research-action  
Evaluation  
Knowledges**



## CIRAD's Cotton Projects – Training and Capacity Building

### *PReFoSyC – « Professionalization and Reinforcement of Training at the Faculty of Agronomy of the University of Parakou for Sustainable Cotton-based Production Systems »*

- Partners: ISTOM (France), Université de Parakou (Benin), IRC (Benin), CIRAD – 2 recherche units (France)
- Country of implementation: Benin
- Duration: 4 years: 09/2023 – 08/2027
- Funding: Agence Française de Développement (AFD) – Agence Nationale de la Recherche (ANR)



## CIRAD's Cotton Projects – Training and Capacity Building



### *PReFoSyC – « Professionalization and Reinforcement of Training at the Faculty of Agronomy of the University of Parakou for Sustainable Cotton-based Production Systems »*

- Creation of 2 MSc programs at FA-UP, including 2-way exchanges between UP and ISTOM:
  - Plant engineering and integrated plant improvement in cotton-based cropping systems
  - Sustainable management of cotton-based cropping systems
  
- 6 PhDs
  
- Continuing professional education: Technical, Professionalization (organizations, associations...), Entrepreneurship

## CIRAD's Cotton Projects – Agroforestry and Adaptation to Climate Change



*INNOVACC – «Innovation for Adaptation to Climate Change - Improving the climate resilience of populations in the North and Far North of Cameroon»*

- Partners: CIRAD – 4 research units (France), World Agroforestry – ICRAF (Cameroon), IRAD (Cameroon), SODECOTON (Cameroon), FONDEM (France)
- Country of implementation: Cameroon
- Duration: 4 years: 04/2022 – 03/2026
- Funding: EU - DESIRA





## CIRAD's Cotton Projects – Agroforestry and Adaptation to Climate Change



*INNOVACC – «Innovation for Adaptation to Climate Change - Improving the climate resilience of populations in the North and Far North of Cameroon»*

- Sustainable increase in agropastoral productivity and rural household incomes
- Development of sustainable renewable energy services based on local resources
- Improved institutional framework and local governance for CC and support mechanisms
- Supporting youth in the creation of green jobs

# CIRAD's Cotton Projects – Agroecological Transition



## TAZCO 2 – «*Agroecological Transition in the Cotton Zones of Benin - Phase 2*»

- Partners: CIRAD – 3 research units (France), AIC (Benin), IRC (Benin), ATDA (Benin)
- Country of implementation: Benin
- Duration: 4+ years: 04/2020 – 12/2024
- Funding: Agence Française de Développement (AFD)



**IRC** Institut de  
Recherche sur  
le Coton\*



## CIRAD's Cotton Projects – Agroecological Transition



### TAZCO 2 – «*Agroecological Transition in the Cotton Zones of Benin - Phase 2*»

- Ensure large-scale adoption of proven agroecological techniques at plot- and farm-level by farmers in cotton-growing areas
- Promote the adoption of collective biomass management mechanisms by village land users (in agriculture and animal husbandry) and of collective agroecological techniques at territory level
- Improve existing agroecological technical reference systems, identify new ones and expand the range of equipment adapted to AET for women and men
- Promote women's economic empowerment through the development of income-generating activities linked to AET

## CIRAD's Cotton Projects – Innovations for Resilience to Climate Change



### *AIRCoA – «Adapting Innovations for Resilience to Climate Change for Smallholder Cotton Farmers in Africa»*

- Partners: CIRAD – 2 research units (France), ICAC (USA), IRAD (Cameroon), SODECOTON (Cameroon), CNRA (Côte d'Ivoire), ESA INP-HB (Côte d'Ivoire), Olam (Côte d'Ivoire), Ivoire Coton (Côte d'Ivoire)
- Countries of implementation: Cameroon and Côte d'Ivoire
- Duration: 3.5 years: 10/2022 – 04/2026
- Funding: GIZ – BMZ



## CIRAD's Cotton Projects – Innovations for Resilience to Climate Change



### *AIRCoA – «Adapting Innovations for Resilience to Climate Change for Smallholder Cotton Farmers in Africa»*

- Validate, adapt and diffuse sustainable innovations in Africa for climate resilience in rainfed smallholder farm
  - Climate-resilient non-GM varieties adapted to innovative cropping systems of high-density planting
  - Rapid rejuvenation of soil health through carbon sequestration as biochar from farm residue bio-waste
  - Zein nanoparticle encapsulated botanical biopesticides for biodiversity conservation & sustainable pest management
  
- Develop entrepreneurship and small-scale businesses for women-self-help groups and youth through skill-development and commercialization of eco-friendly innovations for climate resilience

# Climate Resilience of Smallholder Cotton Farmers

Fund for the Promotion of Innovation in Agriculture and Food (i4Ag)

**Duration:** 43 months, 10/2022 – 04/2026

**Implementation:** Cameroon, Côte d'Ivoire

**Value Chain:** Cotton

Country*	Partner
Cameroon	IRAD, SODECOTON
Côte d'Ivoire	CNRA, SECO, Ivoire Coton, ESA INP-HB
France	CIRAD
Germany	GIZ Côte D'Ivoire: GIC in Côte d'Ivoire GIZ Cameroon: GV AgriChains, ABC-PADER; ProFE
USA	ICAC



## Goal

Validation, adaptation and dissemination of sustainable innovations to improve climate resilience of smallholder cotton farmers.

## Target Group

Extension worker, lead farmers, women and youth

## Targeted impacts

- 48,000 smallholders (15% women) trained in applying innovations to strengthen climate resilience in cotton farming
- 40 % increase in yields for 4,800 smallholder farmers
- 50 young entrepreneurs (30% women) generated additional income
- 15 % increase in soil organic carbon content



# CIRAD's Cotton Projects



- In line with the Roadmap for Cotton Research
- A large array of partners – partners are central to CIRAD
- A large number of disciplines for which CIRAD has expertise + expertise from our partners
- All aimed at contributing to the development of sustainable cotton growing