

Strengthening Partnership between China and CABI under the Belt and Road Initiative

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OUTLINE

- ▶ The Belt and Road Initiative and Agricultural S&T Cooperation Opportunities
- ▶ CAAS Overview and International Cooperation Strategy
- ▶ Successful Case Study on Partnership between China and CABI
- ▶ Outlook and Opportunities for Future Collaboration



1. The Belt and Road Initiative and Agricultural S&T Cooperation Opportunities

New Trends of Global Agricultural Development

- Transformation in the global agricultural development structure
- Impact of climate change
- biodiversity loss, soil and land degradation
- Uncertainties in the global agricultural market
- Food insecurity and poverty



An urgent need to conduct cooperation to jointly promote agricultural sustainability.



NEWS IN FOCUS

NEUROSCIENCE Brain-encircling neuron could offer clues to consciousness **p.14**

ASTRONOMY Mystery cosmic bursts come of age, posing research challenges **p.16**

CONSERVATION Guidelines push for ethics in killing of wild animals **p.18**



MIGRATIONS Refugee scientists tell their stories **p.24**



Fall armyworm caterpillars are devastating crops in Africa.

AGRICULTURE

Invasive pest hits Africa

As hungry caterpillar eats its way through 12 countries, researchers begin to fight back.

BY SARAH WILD

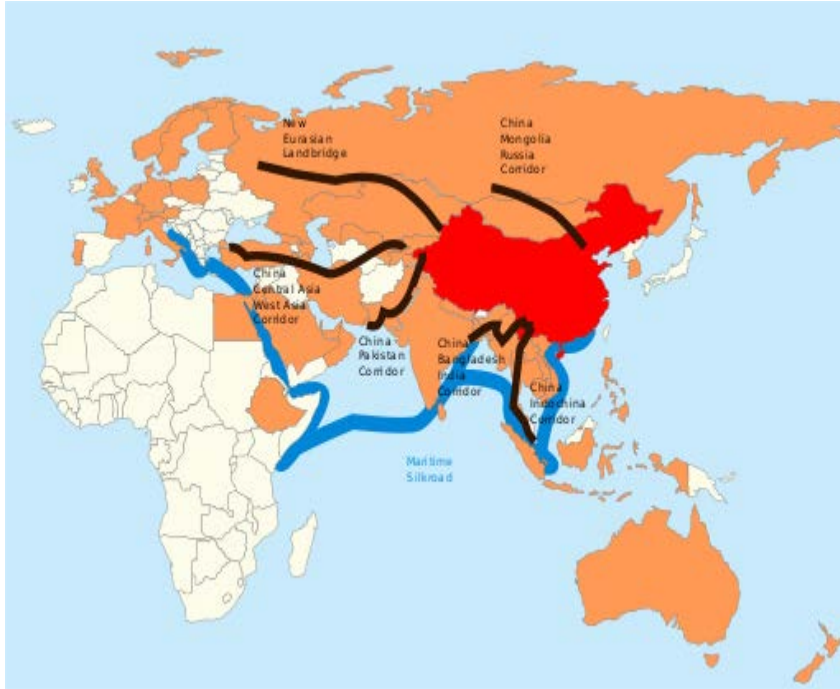
response. Sixteen countries agreed to urgent January 2016, and has since moved to at least

Fall armyworm global spread



Dr Roger Day, CABI's Programme Executive for Action on Invasives, says: "This is disappointing news but not a surprise, as our previous work has shown the pest was likely to spread beyond Africa into other parts of the world. CABI and the University of Exeter have been forecasting the global extent of the fall armyworm invasion for a new piece of upcoming research. Based on this work, I think we can expect to see this pest spread rapidly in India and to other countries in many parts of Asia."

The Belt and Road Initiative (BRI)



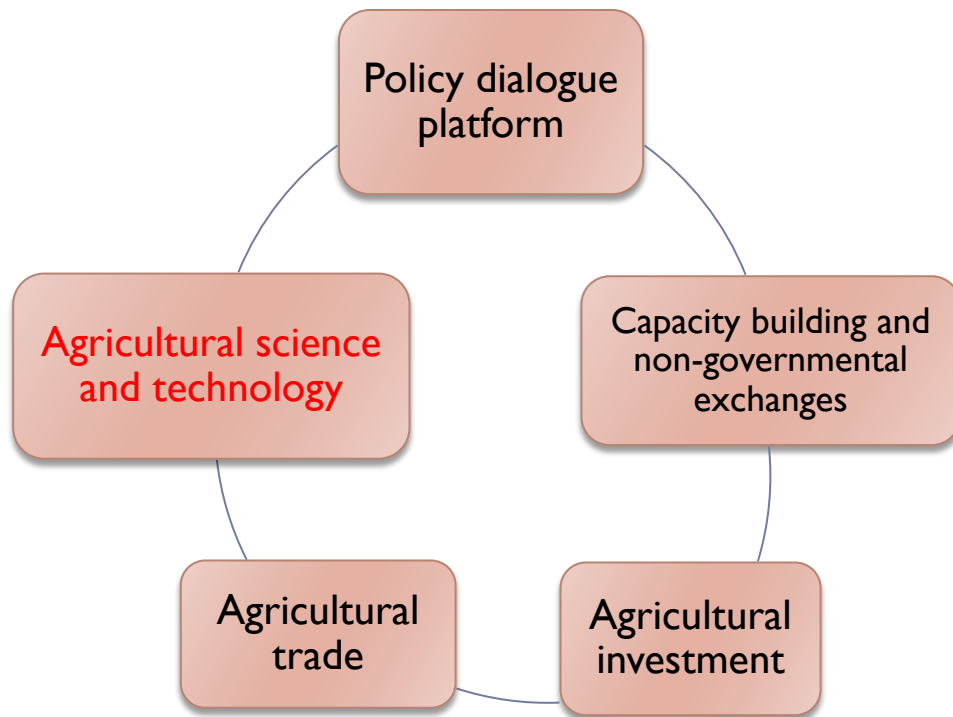
The initiative was unveiled by President Xi Jinping in September and October 2013 during visits to Kazakhstan and Indonesia, and was thereafter promoted by Premier Li Keqiang during state visits to Asia and Europe.

Five Goals

- Policy coordination
- Facilities connectivity
- Unimpeded trade
- Financial integration
- People-to-people bonds

Agricultural Cooperation under BRI

The *Vision and Action on Jointly Promoting Agricultural Cooperation on the Belt and Road* is released in May 2017 to foster top-level design on agricultural cooperation along the Belt and Road.



Agricultural Cooperation under BRI

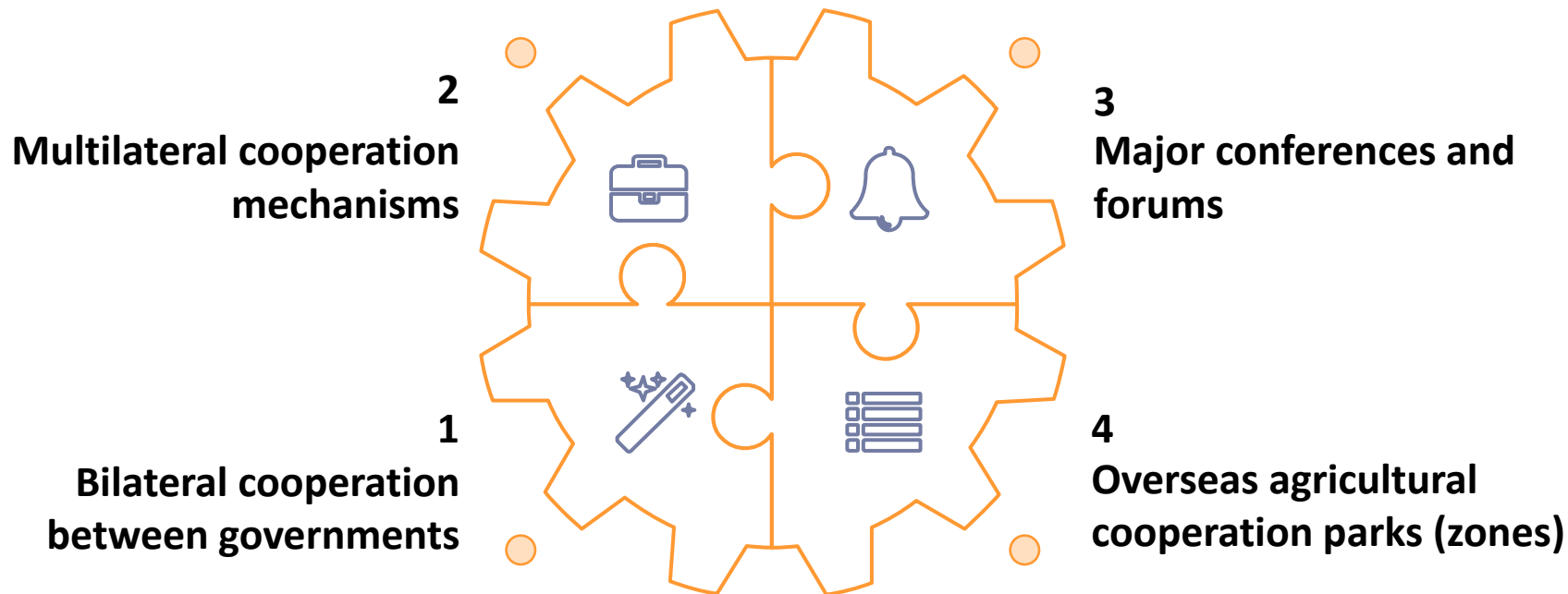
Priorities : Agricultural science and technology

- 1) Prioritize science and technology cooperation and strengthen knowledge sharing, technology transfer, information communication, and personnel exchanges through multiple channels
- 2) Establish joint labs, experiment and demonstration bases and agricultural science and technology demonstration parks (zones), **prevent and control animal and plant diseases and outbreaks**, and conduct germplasm exchange, joint research and showcase of findings to enhance exchanges on species, technology and products
- 3) Jointly build the public information service platform(s) for agricultural cooperation along the Belt and Road, the technical advice and service system(s), and high-end think tank(s) and training base(s)



Agricultural Cooperation under BRI

Mechanism



2. CAAS Overview and International Cooperation Strategy

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Addressing strategic key issues of S&T in agricultural and rural development in China, making contribution to food security, food safety and poverty reduction through research, partnership, capacity building and policy support



1
graduate school
5,100+
students
395
foreign students

Scientific innovation system of CAAS

9 Disciplinary Clusters



57 Research Areas



302 Research Directions

**An Innovation-Driven Science
Organization**



Crop Science



Horticulture Science



Animal Science



Veterinary Medicine



Plant Protection



**Agro-resources and
ENV**



**Agro-Mechanization
and Engineering**

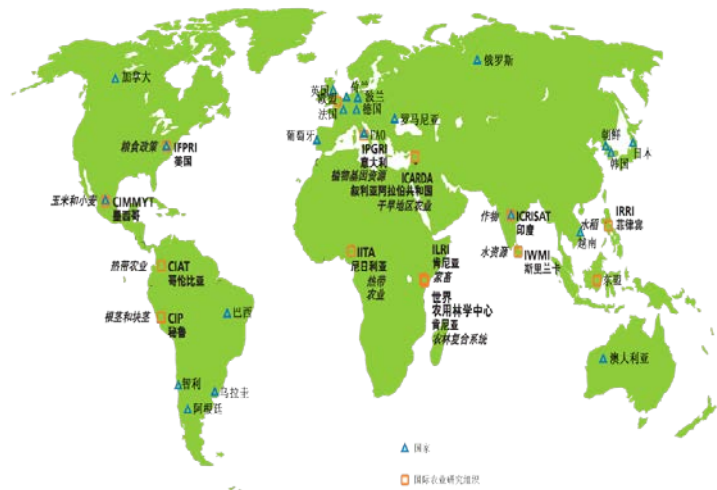


**Agro-product Quality
and Processing**



**Agro-Information and
Economics**

CAAS International Cooperation Profile



- 83 countries
- 38 international organizations
- 7 multinational corporations
- 13 representative offices
- 62 joint-labs

- ❑ Cooperation with: **83** countries and regions, **38** international organizations, **7** MNCs and Gates Foundation with **82** agreements signed
- ❑ **13** representative offices of international organizations
- ❑ **62** joint laboratories / joint research centers with counterparts in the United States, Canada, Japan, etc., and also some international organizations
- ❑ **4** overseas joint laboratories were established in Brazil, Belgium, Australia and Kazakhstan
- ❑ **6** FAO and OIE reference labs.

CAAS International Cooperation Profile

Cooperating with B&R countries in agricultural S&T

Over 60 techs and products developed by CAAS “Go Global”.



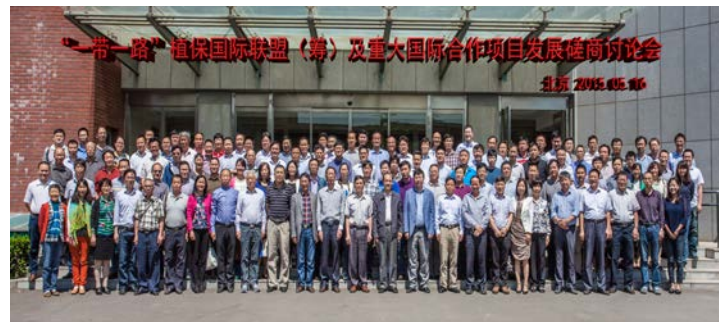
- **Vaccine:** export avian flu vaccine and diagnostic reagent to Bangladesh and Egypt
- **Veterinary medicine:** co-build a joint Lab on Chinese Traditional Veterinarian Medical with the Chiang Mai University
- **Crops:** Over 30 new varieties have been approved or registered in target countries; over 50 varieties are under regional testing
- **Oilseed:** Develop drought-resistant high-yield double-low hybrid brassica in Pakistan
- **Cotton:** promote cotton related techs in Kirghizia, Kazakhstan and Pakistan
- **Bio-gas:** 52 training courses for North Korea, the Philippines, Columbia and so on
- **IPM:** Build trichogramma pilot producing factories in Laos and Burma

CAAS International Cooperation Profile

Cooperating with B&R countries in agricultural S&T




➤ B&R Plant Protection International Consortium

- Provide bilateral/multilateral plant protection technology consultation among B&R countries
- Carry out multilateral collaborative research activities on plant protection
- Promote international academic exchange and technical training among B&R countries on plant protection



Establish new cooperation mechanism for plant disease and pest prevention and control, May, 2015

New requirements on Agricultural Scientific Research

- **Facing the new round of science and technology revolution**
 establish a series of world-class agricultural science centers
- **Focusing on the overall and key obstacles that constrain the development of agriculture**
 establish a series of national-level technology innovation centers
- **Aiming at resolving prominent problems that hurdle development in agricultural ecological regions and economical zones**
 establish a series of regional-level technology innovation centers



Work Packages for CAAS Moving Forward

**Action 1- Agricultural Science and Technology Innovation Program (ASTIP):
an important roadmap to build CAAS a top-notch agricultural science research**

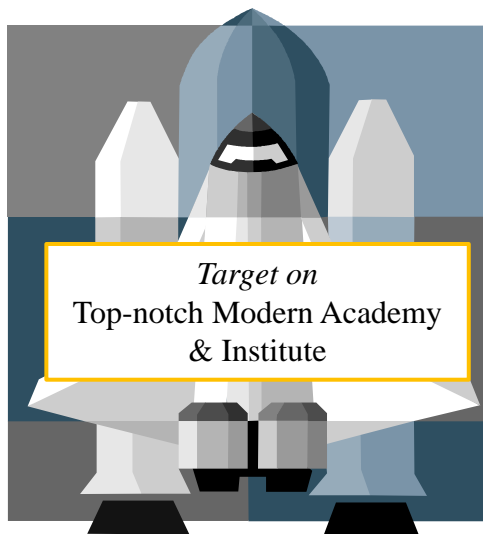
Plan: 2013-2025, in 3 phases

- 8 disciplinary cluster, 107 subjects
- 332 directions

Winged by R&I

- 10 world-class scientific research centers
- 30 national scientific research centers

Optimize scientific research operation
and management



Target on
Top-notch Modern Academy
& Institute

Powered by
Mechanism Creation

- Elite Youth Program to recruit outstanding talents

Winged by Capacity Building

- International renowned teams: 30
- Domestic leading teams: 100
- Industrial featured teams: 30

Build a multi-layer coordinated
innovation system

Work Packages for CAAS Moving Forward

Action 2-Center for International Agriculture Research (CIAR)



中国农业科学院

海外农业研究中心

Center for International Agricultural Research, CAAS

founded in January 2016, **CIAR** is a state-level international center for scientific research, providing information and agricultural talents training, which serves “Go Global” strategy and “Belt and Road Initiative”.

1. International Agricultural Scientific Research

3. International Agriculture Information Service

2. Agricultural Technology “Go Global”

4. Cultivate international agricultural talents

5. Take lead in cooperation issues nationwide



Work Packages for CAAS Moving Forward

Action 2-Center for International Agriculture Research (CIAR)

2 Sessions of International Agricultural Research Conference have been successfully held in 2017 and 2018

2nd International Agricultural Research Conference released

- Study on 65 Belt and Road Countries for Agricultural Development and Cooperation
- Global Market Analysis of 19 Agro-products
- Information Service Platform for Agriculture Going Global Version 2.0



Work Packages for CAAS Moving Forward

Action 3-Establish the Western Research Center of CAAS: Build a bridgehead with Central Asia to promote B&R cooperation

- Establish Western Research Center of CAAS to **develop dry land agricultural technology cooperation** with the **western China and Central Asia**, thus turning this region into a agricultural science & technology achievement demonstration site of the “Silk Road Economic Belt” .
- S&T innovation to **support modern agricultural development in western regions** in order to build a national comprehensive agricultural R&D and service base and a cooperation window opening for Central Asia.
- Promote the regional agricultural S&T innovation alliance with characteristics of the western region and develop the “**China-Central Asia Agricultural Science & Technology Cooperation and Communication Center**”



CAAS International Cooperation Development Plan

CAAS will continue to implement the innovation-driven development policy, leverage science & technology innovation in agricultural development and expand cooperation with B&R countries.

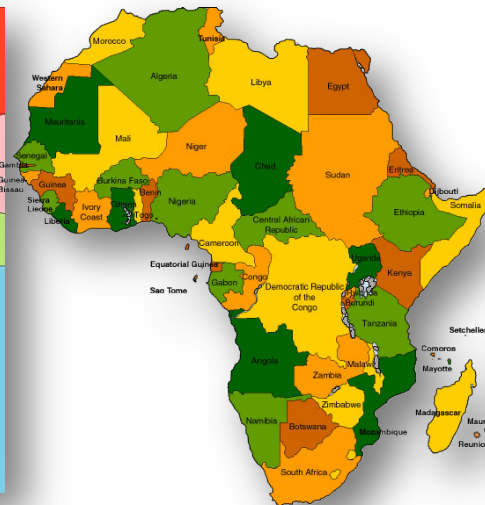
Southeast Asia and South Asia



- Follow existing cooperation mechanisms, such as “10+1” and APEC
- Variety breeding, pest prevention and control and planting technique of rice, corn and cotton
- Animal healthy breeding and safety production
- Material pest monitoring warning and comprehensive prevention and control
- Comprehensive use of renewable energies in rural areas
- Capability building and talent training

CAAS International Cooperation Development Plan

Central Asia, West Asia and Africa



- To build the China-Kirghizia Joint Lab in Agricultural Research Center, China-Kazakhstan in Veterinary Biological Technology
- Promote the cooperation mechanism of China-Africa Agricultural Scientific Research 10+10 Initiative
- Cotton, corn and wheat planting cooperation and seed R&D
- Animal and plant epidemic disease prevention and control, animal vaccine R&D
- Animal and plant variety resource introduction and exchange
- Agricultural HR development cooperation

CAAS International Cooperation Development Plan

Central and East Europe



- To establish the China-Central and East Europe Agricultural Science & Technology Cooperation Forum
- Cooperate in corn, wheat, pasture and animal husbandry and products processing
- Animal and plant epidemic disease monitoring and joint prevention and control
- Easy, clean, mechanized and sustainable agricultural technology

3. Successful Case Study on Partnership between CABI and China

Important Milestones of China-CABI collaboration

1980	Courtship between China and CABI started, and long-term abstracting arrangements set up
1995	China joined CABI as a Member Country
2002	CABI China Project Office opened at CAAS' invitation
2007	CABI-China Joint Summit on Strategic Partnership, signing of the MoU between MARA and CABI
2008	Establishment of MARA-CABI Joint Laboratory for Biosafety
2009	CABI China Project Office updated to CABI Beijing Representative office
2013	CABI Beijing Representative office updated to CABI East Asia
2015	20 years anniversary celebrate for China – CABI collaboration
2018	CABI's Asia-Pacific Regional Consultation held in Beijing, China
...	...

MARA-CABI Joint Laboratory for Biosafety

- Established in 2008
- Located at IPP/CAAS,
- The **first** Joint Lab and the **only one** established by CABI and its member countries so far

Functions:

- A platform for research collaboration & technology transfer
- A centre for training and scientific exchanges
- An open platform for joint collaboration with third parties
- Consultancy services



MOU Signed between MOA and CABI 2007



Opening Ceremony of MARA-CABI Joint Lab for Biosafety 2008

MARA-CABI Joint Laboratory for Biosafety

Main collaboration field:

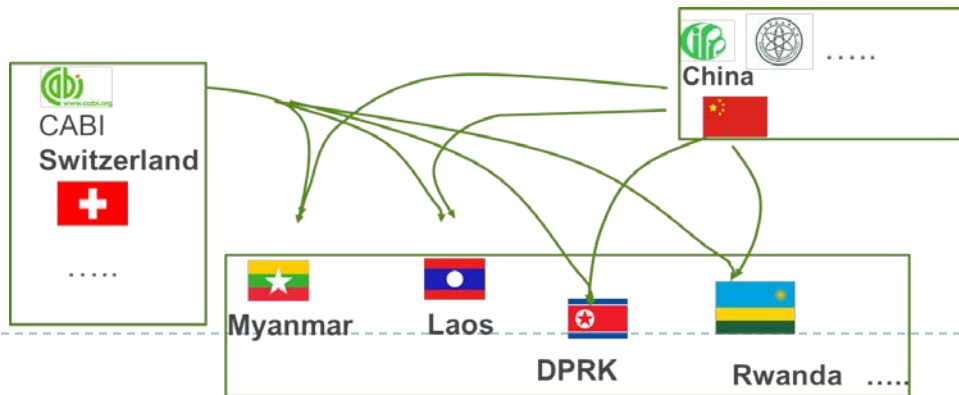
- Integrated pest management (IPM);
- Research and development of biological control technology;
- Prevention and biocontrol of invasive alien species;
- Environmental safety research of GMOs;
- South-South Cooperation.



MARA-CABI Joint Laboratory for Biosafety

Major Achievements

1. Develop more than 10 **international cooperation projects** on green plant protection and prevention technology, advancing China's agricultural development.
2. Facilitate China's agricultural technology “go global” (Laos, Myanmar, Pakistan, Rwanda, etc.) through **South-South cooperation**.



MARA-CABI Joint Laboratory for Biosafety

Major Achievements

3. Implement “Plantwise” to benefit farmers in developing areas.

In Beijing, Sichuan, Guangxi and Henan, 43 plant clinics were established, 98 plant doctors were trained, and more than 20,000 comprehensive prescriptions for crop pests and diseases were issued for local farmers.



MARA-CABI Joint Laboratory for Biosafety

Major Achievements

4. Develop **capacity building** via scientific exchanges and personnel training.
 - 2 post-doctors, 2 doctors, 5 postgraduates, 50 undergraduate interns, and 3 international interns trained.
 - 3 monographs, 24 academic papers (including 20 SCI articles) published
 - 2 domestic invention patents
 - more than 200 mutual visits by domestic and foreign experts
 - 14 South-South cooperation technical training were organized, receiving more than 500 trainees.



MARA-CABI Joint Laboratory for Biosafety

Major Achievements

5. Reward by Chinese Government

Dr. Ulrich Kuhlmann, Executive Director of Global Operations, CABI and Co-Director of Joint Lab, received **China's Friendship Award** – Highest Chinese Honor for Foreign Experts in 2012.



Conferences/Workshops Co-hosted

- 1999, the 1st International Workshop on White Agriculture
- 2004, CABI's Review Conference aligning with the 2nd International Workshop on White Agriculture
- 2007, CABI-China Joint Summit on Strategic Partnership
- 2009 & 2013, 1st and 2nd International Congress on Biological Invasions
- 2015, 20 years of Strategic Collaboration between China and CABI



Donation continuously increased

Total amount : USD 2,600,000

Year	USD/Year
2008-2009	50,000
2010-2011	100,000
2012	200,000
2013	250,000
2014	300,000
2015	350,000
2016-2018	400,000



4. Outlook and Opportunities for Future Collaboration

Opportunities for Multilateral Collaboration

- China's large agricultural research, extension & information systems
- China's increased contributions to CABI
- Fostering and participating South-South Cooperation via multilateral linkages
- China's "Belt and Road Initiative"
- ASEAN +1 Trust Fund, Asian Development Bank, and other regional programs
- CAAS research capacity and leading role within the national system+ CABI's knowledge management experiences and global network



Prospects for Future Collaboration between China and CABI

- Strengthen **high-level dialogues and exchanges**, and take more **proactive role** in CABI strategic direction.
- Optimize functions of the Joint Lab platform and accelerate the construction of **European Lab in Switzerland** .
- Promote **South-South Cooperation** on technology transfer and technical training under the framework of **Belt and Road Initiative**.
- Draw common interests and **develop funded programs** together with CABI and its Asia-Pacific member countries’
- Get CABI and its member countries more involved in the **collaborative activities of CIAR, CAAS**.
- Expand cooperation in agricultural **information and knowledge sharing**.



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- ▶ **China will continue to work in partnership with CABI and other member countries towards a sustainable future.**
 - ▶ **Through the established platforms (e.g. the MARA-CABI Joint Lab), we hope that more of bi-lateral, tripartite and/or multilateral collaboration can be developed.**

Thank You !

