

## **NBS Good Practices from Chinese government**

May 2019

### **Global Environment Facility (GEF) Climate Smart Staple Crop Production Project**

#### **1. Background**

China has to feed about 22% of the world's population with only 9% of the cultivated land. The widely used agricultural production mode that over-reliance on the increasing of agricultural inputs can no longer cope with the challenges facing China such as population increase, shortage of arable land and water resources, water and soil erosion, natural disasters, environmental pollution and climate changes. Therefore, under the precondition of ensuring food production capacity, it is a strategic option for the agricultural sustainable development of China to promote and deploy the related energy-conservation and low-emission technologies to increase soil fertility and productivity while increasing soil carbon sequestration and reducing greenhouse gas emission.

Ministry of Agriculture and Rural Affairs of the People's Republic of China applied "Climate Smart Staple Crop Production" project (WB Pro No. 144531/GEF Pro No. 5121) of Global Environment Facility through World Bank to solve the ubiquitous high-input and low-efficiency problem, draw lessons from international experience.

Two major representative grain production areas in Henan and Anhui Provinces were selected, under staple crop production system of wheat, corn, rice. Through integration and demonstration of key technologies' on greenhouse gas emission reduction in crop production, innovation and application of supporting policies, promotion and dissemination of public knowledge, the project aims to increase the use efficiency of agricultural inputs (e.g. fertilizer, pesticides, irrigation water and agricultural machine), decrease crop system greenhouse gas emission and increase soil carbon sequestration, establish smart climate crop production system, enhance the adaptability of crop production to climate change in the project area, promote the transformation of agricultural product model in China, provide experience and set an example for ecosystem of cropland coping with climate change.

The project meets the guidelines of the 5th operational plans of GEF (Overcome the barriers in respect of increasing energy efficiency and conservation). Through promoting low-input, high-efficiency and soil sequestration technologies, the project aims to accelerate the transformation of agricultural production mode of China, decrease nitrous oxide and other greenhouse gas emission.

#### **2. Implement period**

The project period start from October, 2014 to March, 2020

#### **3. Stakeholder**

The government, agricultural sectors, experts group, farmers and cooperation are

involved in the implementation of project. Management agencies at national, provincial and county levels were established. At the national level, the Project steering committee, the National Project Director (NPD), National Project Management Office (PMO), Chief technical advisor of the project (CTA), National expert groups are included. At the provincial level, the stakeholder consists of Provincial Leading Group and PMO. At the county level, it includes County Leading Groups and PMOs.

#### **4. Beneficiary**

The main beneficiaries are farmers including small householders, family farms owners, cooperation, leading producer who play the key role during the process the project implementation.

#### **5. Total investment and funds constitute**

The project fund including the grant of word bank (5,100,000 U.S. dollar) and co-financing fund (25,000,000 U.S. dollar), the fund allocation is listed in Table 1.

#### **6. Project level**

National project

#### **7. Climate Change and mitigation and adaptation impact**

By the end of 2018, the cumulative emissions reduction of greenhouse gases was 20754.66 ton of CO<sub>2</sub>-eq, and carbon sequestration was 54458.54 ton of CO<sub>2</sub>-eq.

#### **8. Social, economic and environmental impact**

In 2018, crop yield per unit increased by 6.2%, net income of farmers increased by 10.84% in average. The project technology covered crop planting area was 4437.6 hectares, the professional cooperation organization served the crop planting area of 1967 hectares, reducing 1967 tons of fertilizer, 437 kilograms pesticide, saving 822000 tons of water, 30 village-level platform are established, trained 20035 people\*day, of which 8673 women, 13849 farmers adopt project technology, including 7599 women. It can be seen that the implementation of the climate-smart agriculture carbon sequestration has a positive impact on the quality of surface water. The implementation of the project has reduced the amount of non-point pollution discharging to water bodies during the agricultural production process and effectively reduced the pollution of agriculture to the environment.

#### **9. Relevant figures or tables**



Figure 1 Location of the Demonstration Areas

Table 1 Allocation of project fund ( Unit: Ten thousand U.S. dollar )

Project Component	Amount of Grant	Co-financing
Technology Demonstration and Deployment	396	2000
Policy Development	50	100
Knowledge Management	40	200
Project Management	24	200
<b>Total</b>	<b>510</b>	<b>2500</b>



Figure 2 Distribution of special fertilizer for soil testing in the project area



Figure 3 Field gas monitoring device and anti-interference device in project area



Figure 4 Less-tillage wheat-corn planting equipment in the project area



Figure 5 Less-tillage soy and peanut planting equipment in the project area



Figure 6 In the late stage of wheat production in the project area, “one time spray, three kinds of defense” action was applied to prevent pests, lodgings and dry hot winds.



Figure 7 Corn stalk returning to the field



Figure 8 Farmers' theory and on-site training in the project area