



Cotton byproducts utilization in China and Future Technical Collaboration with Africa

Dr. GONG Xifeng
Counselor of Chinese Mission to WTO

2019. 06.07

Outline

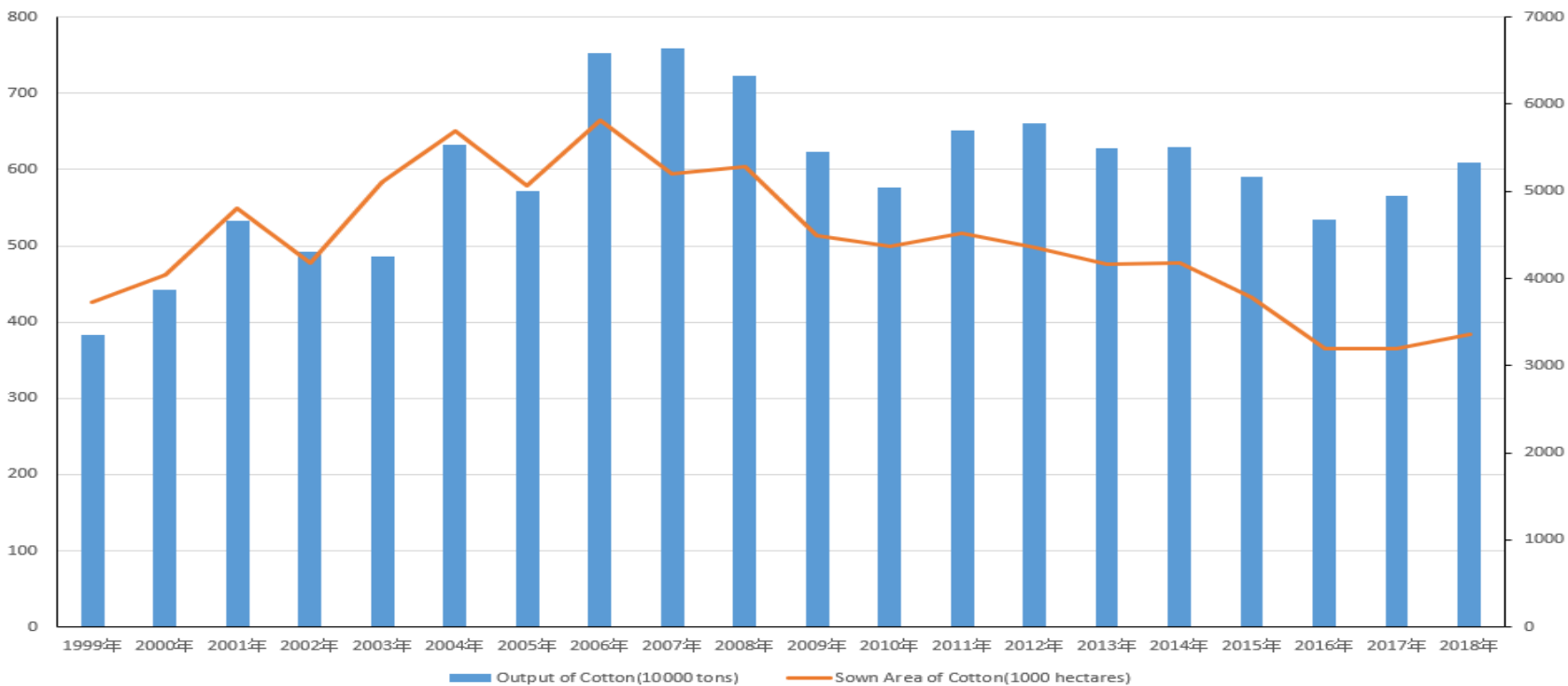
1. Overview of Cotton Production in China.
2. Utilization of Cotton by-products in China.
3. Future Technical Cooperation with Africa





1. Overview of cotton production in China.

Cotton is the one of the most important cash crops with the long industrial chain, which is playing an important role in economic and social development both in China and world.



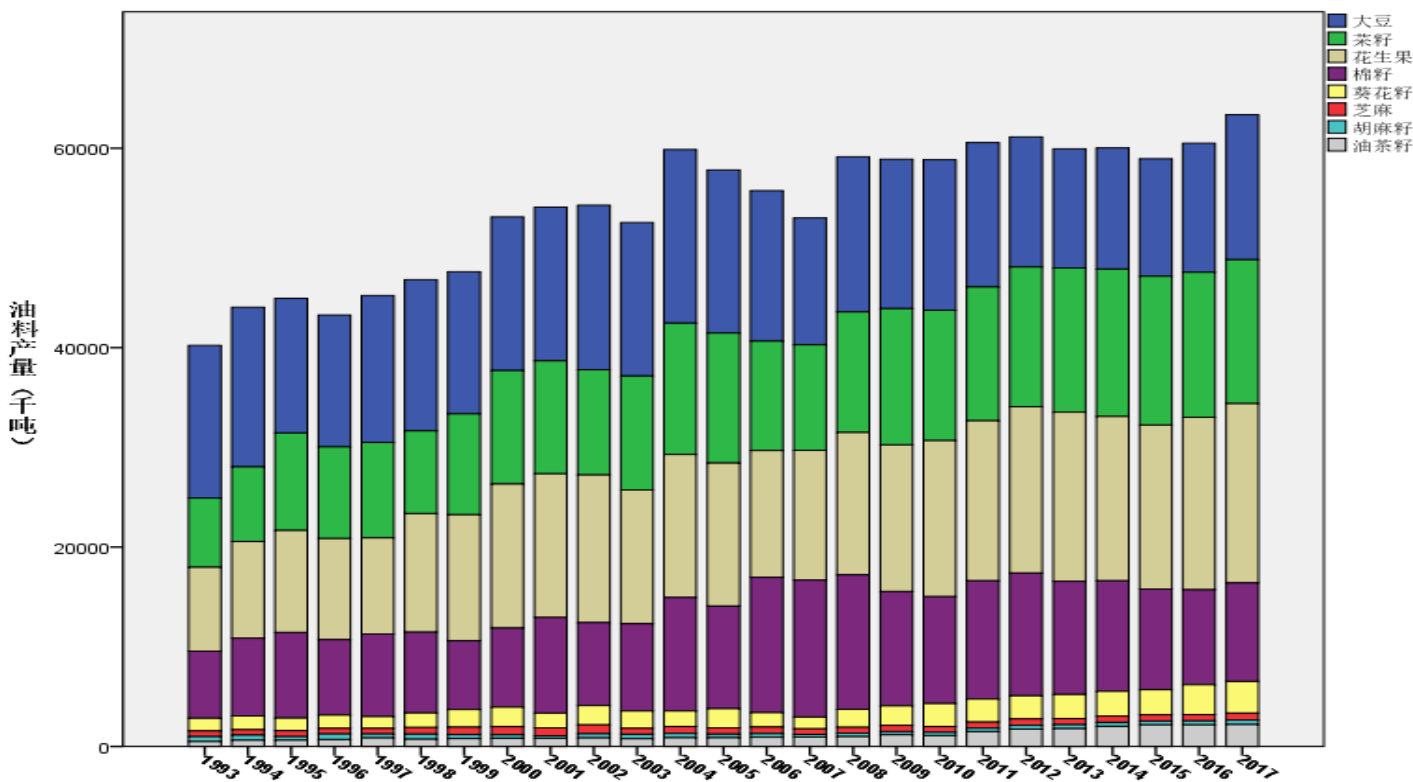
Output and Sown area of Cotton from 1999 to 2018 in China

According to the National Bureau of Statistics of China, the cotton sown area in China was 3352.3 thousand hectares (50.285 million mu) in 2018, with a total output of 6.096 million tons.



2. Utilization of Cotton by-products in China.

Cotton lint can be used as textile raw material, but a larger amount of cottonseed produced during processing is also an important oil and protein resource in China.



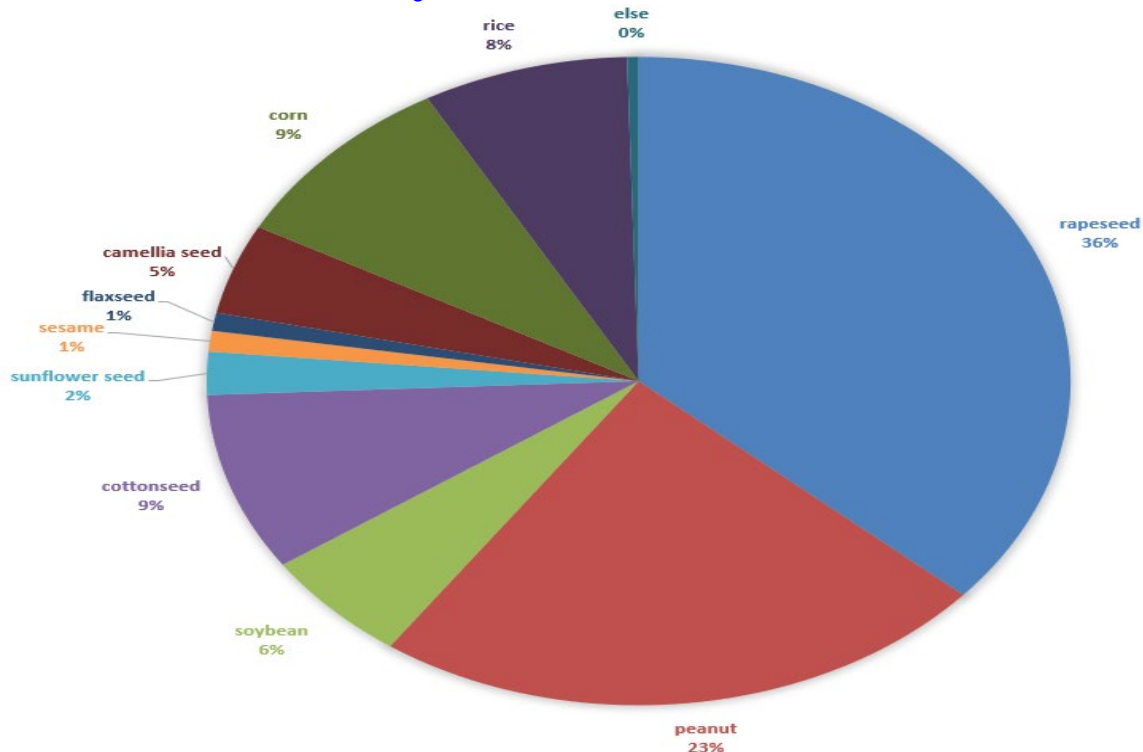
Output of oil crop from 1993 to 2017 in China.

According to the National Grain & Oils Information Center: In 2017, the total output of eight major oilseeds such as rapeseed, peanut, soybean, cottonseed, sunflower seed, sesame, flaxseed and camellia seed was 61.425 million tons, of which cottonseed production was 9.875 million tons, accounting for 16.08%. Cottonseed has been the fourth largest oil crop in China.



2. Utilization of Cotton by-products in China: Cottonseed oil

The cottonseed vegetable oil production of China was 1.04 million tons in 2017, accounting for 8.9% of the total output of edible oil by oil crops grown domestically.



Proportion of various vegetable oil from the oil crop produced domestically in China of 2017.



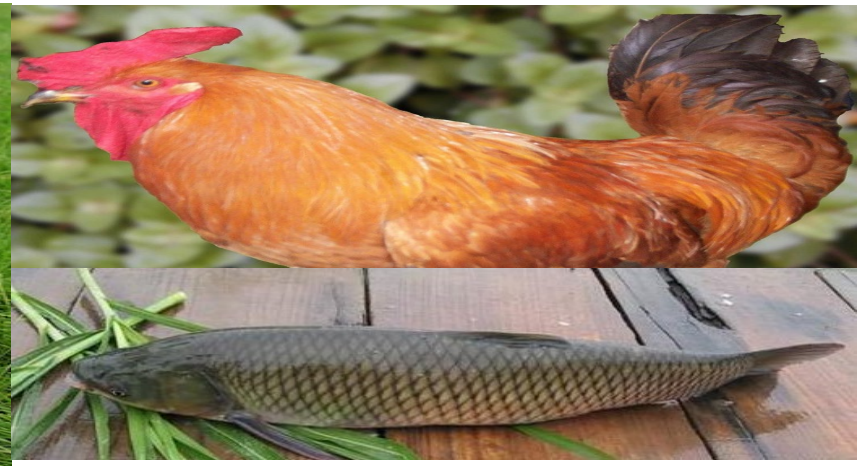
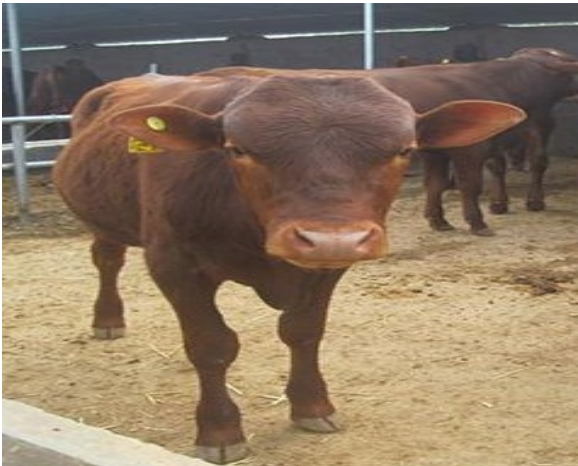


2. Utilization of Cotton by-products in China: Cottonseed cake and meal



Cottonseed cake and meal are mainly used as high protein feed ingredients for ruminant of cattle and sheep and aquaculture.

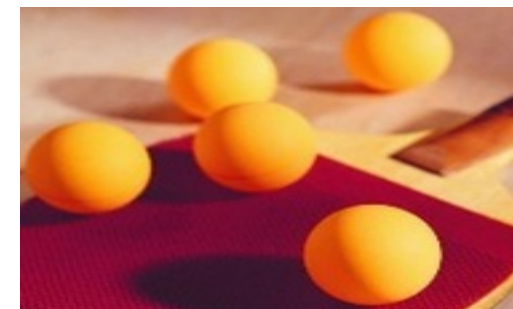
Cottonseed cake and cottonseed meal with different protein content





2. Utilization of Cotton by-products in China: Cotton linters

The cotton linters can be used to produce acetate, cellulose ether, and nitrocellulose, widely used in textile, food, pharmacy, daily chemical, electrics, plastics, military, building materials.





2. Utilization of Cotton by-products in China: Cottonseed hulls

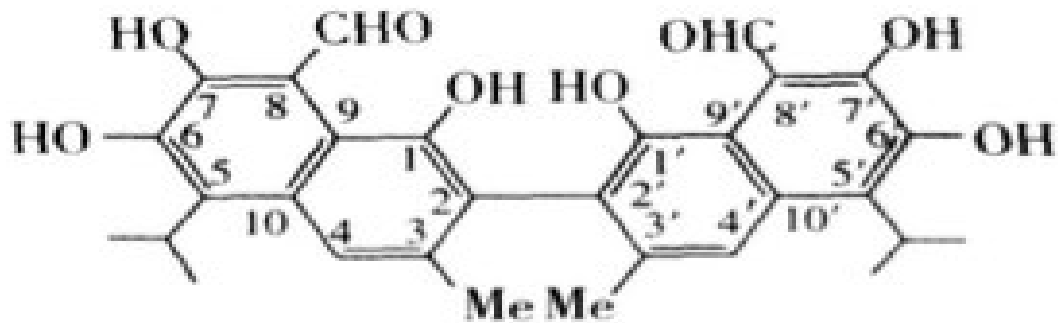
The cottonseed hull contains 5-8% crude protein, which is the main raw material for the cultivation of edible mushrooms, and can also be used directly as feed.



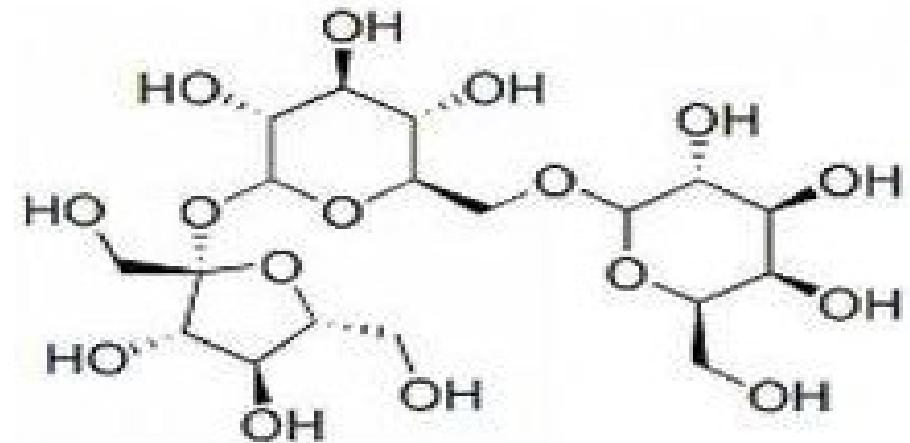


2. Utilization of Cotton by-products in China: Chemicals

Through application of new technology, cottonseed can be used to produce food-grade protein, and also gossypol, raffinose, tannin, phytic acid etc., which are used in the field of pharmacy and food.



Gossypol

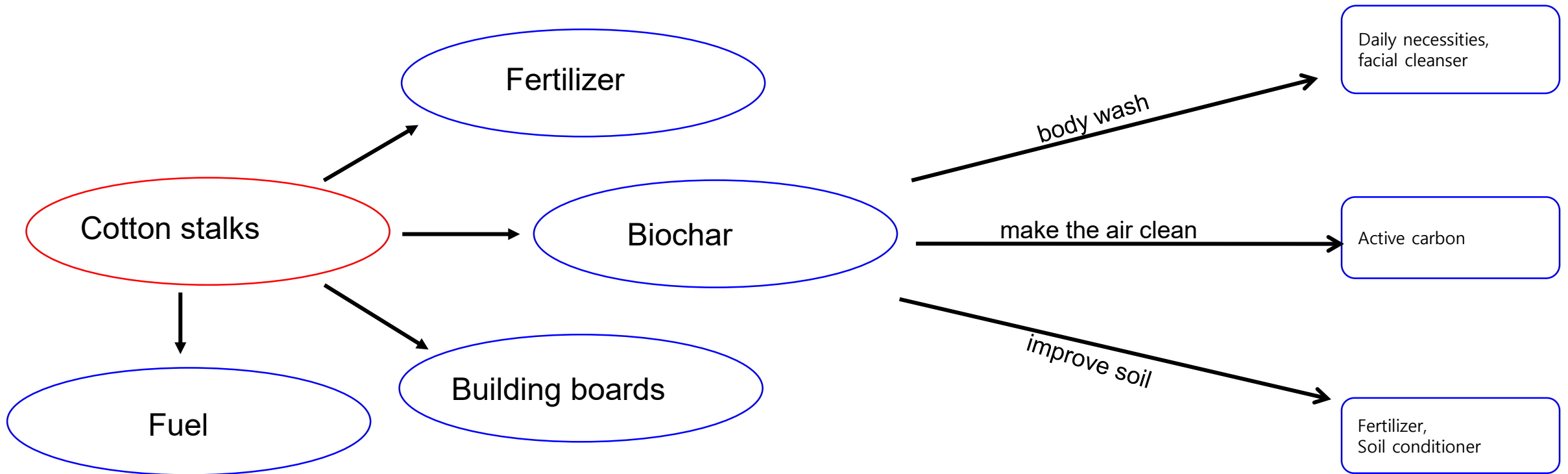


Raffinose



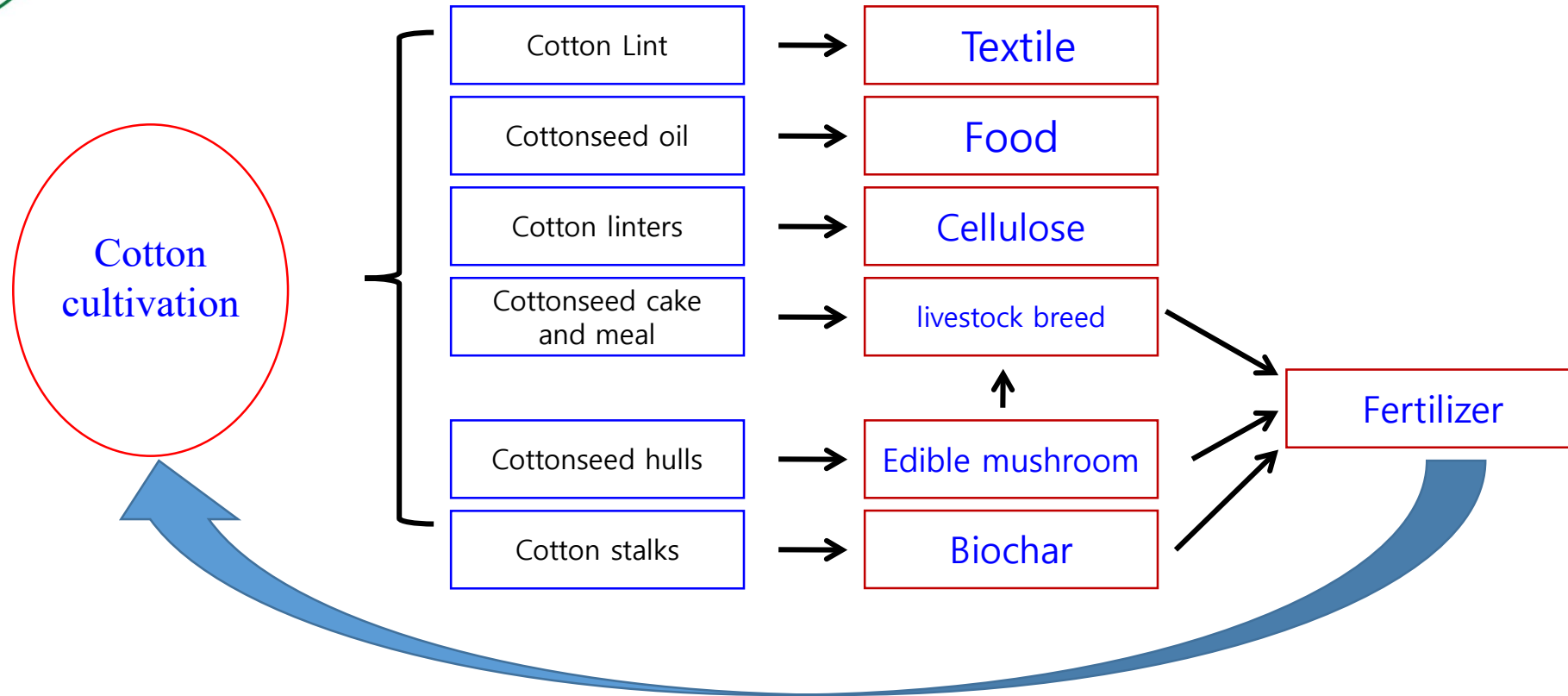
2. Utilization of Cotton by-products in China: Cotton stalks

Cotton stalks can be directly crushed and returned to the field as fertilizer, or processed into biochar, fuel and building boards.





Sustainable Circulative Agriculture in China



The longer the cotton industry chain, the more subdivided the industry, the more jobs, the more full use of raw materials, the higher the added value of products.



Cottonseed processing technologies in China

There are two mainstream cottonseed processing technologies in China. One is extrusion pretreatment and direct-extraction to obtain ordinary cottonseed meal, and the other is liquid-liquid-solid extraction to produce cottonseed protein with very low levels of gossypol.





3. Future Cooperation with Africa in Cotton

Cotton industry is the key priority for China and C4 collaboration under WTO framework, China as important member of WTO, has consistently support WTO and C4 on cotton areas, last September, China and Africa launch “ Agricultural modernization cooperation plan” technical cooperation on cotton is vital part of the plan.

- **Who has the cotton byproducts technology in China:** Research Institutions like CAAS, CAMA, XAAS on cotton harvesting and seed processing etc and Agribusiness firms like Xinjiang Hongda Company on cotton stalk processing.
- **What technologies on cotton byproducts are already in Africa:** Stalk harvesting and processing technology and equipment, cotton seed and oil processing, seed cake and meal processing etc.



3. Future Cooperation with Africa in Cotton

1. Consolidate cotton byproducts research cooperation and training to improve the capacity in Africa particularly C4 through transfer of technology。
2. Cotton seed and relevant byproducts processing are well developed and relevant equipment and facilities are available , we encourage Chinese firms to invest in Africa to bring their technology to develop local economy as we already in the past..
3. Promote multi-stakeholder South-South Cooperation projects on key cotton byproducts.

、



Thank you