Practices of Agricultural Modernization

SKIAD Plan

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Introduction to SKIAD

- SKIAD was born in February 1952. According to the order issued by Chairman Mao Zedong, the Fourth Agricultural Construction Division was established, and a group of state-owned farms were established along the coasts, rivers, and deserted beaches of Jiangsu.
- SKIAD has a total land area of 1.83 million mu, a total population of 185,000, and 43,000 employees.
- After nearly 70 years of reform and development, a “1+X” industrial pattern with modern agriculture as the core and supported by medical and health, real estate and related investments has been formed.
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01 The development process of SKIAD

Four stages of agricultural development of SKIAD

1952-1979

State farms

The start-up period of SKIAD

Agricultural production was managed and run by the collective, a wage system was implemented for farm workers, production tasks were arranged by the production team leaders in a unified manner.

1979-2000

Household contract responsibility system

Large farms with small farms

After China started its reform and opening-up, it learnt from the experience of Xiaogang Village, and introduced the reform of the “fixed, packaged and rewarded” household responsibility system.

2000-2007

Land leasing

Turning in land contract fees first and then obtaining the land contract right

Workers in farms and enterprises were divided, agricultural machinery was privatized, and fields were divided into “identity fields and leased fields” (The rent for identity fields is equivalent to employee pension and medical insurance paid by the farm, and the leased fields are clearly marked and open for bidding.)

2007 to present

Integrated management

Industry chain integration

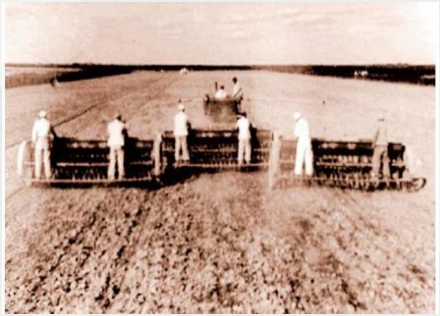
In 2011, the planting resources in the reclamation area were integrated and SKIAD was set up, with a view to advance the integrated operation of the whole agricultural industry chain.

1.1 State farm management

Start-up period

- Agricultural production was managed and operated by the collective
- A wage system was implemented for farm employees
- Production tasks were arranged by the production team leaders in a unified manner.
- Layout of agricultural production was striped

- At the end of the 1950s, the farm took the lead in introducing agricultural machinery to replace manpower and animal power for agricultural production.
- By the 1970s, as tractors and combine harvesters were widely used in agricultural plowing, harrowing, sowing, and harvesting operations, the farm took the lead in realizing agricultural mechanization.
- **Rice production reached 600 jin/mu.**



Household contract responsibility system

- After the Third Plenary Session of the 11th Central Committee was convened, China entered a new historical period of reform and opening up. The farm learnt from the experience of Xiaogang Village, and introduced the reform of the "fixed, packaged and rewarded" household responsibility system.
- A family farm business model emerged, and a two-tier business system of "big farms with small farms" has been gradually formed.
- Unified farm operations and unified management of products were realized, farms undertook business risks, households launched production activities, bonuses was linked with production benefits.
- **Rice production exceeded the target of 1,000 jin/mu.**

Household contract responsibility system

- Set tasks, costs, and output
- Ensure output, output value, and costs
- Rewards for over-production and over-profits
- Compensation for failed production tasks

1.3 Land leasing management

Land leasing management

- Workers in farms and enterprises were divided, agricultural machinery was privatized.
- Fields were divided into “identity fields and leased fields”.
- Land leasing featured by “turning in land contract fees first and then obtaining the land contract right”
- Planting workers bear agricultural market risks and natural risks

- The enthusiasm of employees in farming was effectively mobilized, coupled with the rebound of domestic food prices at that time, resulting in an increase in employee income.
- At the same time, many problems appeared, such as insufficient investment in agricultural production infrastructure, falling soil fertility, declining agricultural mechanization, frequent local natural disasters, weak disaster resistance, and rice output hovering around 1100 jin/mu。
- Rigid expenditures of farms increased, the collective cannot make ends meet, and various production and social contradictions became prominent.

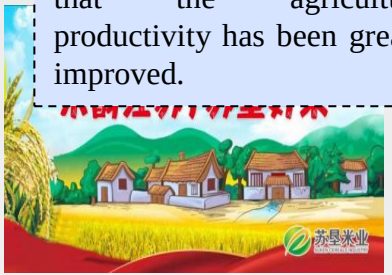
1.4 Integrated agricultural management

- Wheat and rice production is mechanized and intelligent.
- Agricultural mechanization reaches more than 98%.
- The contribution rate of agricultural scientific and technological progresses exceeds 72%.
- The commodity rate of agri-products is over 98%.
- The path of agricultural modernization in Jiangsu:

Efficient output, safe products, resource conserving and environmentally friendly

Integrated management of the whole agricultural industry chain

- A simulated joint-stock production and management system was implemented in 2007
  - Farm holding, employee shareholding, unified management, benefit and risk sharing
- In 2011, plantation resources in the reclamation area were integrated and Jiangsu Nongken Agricultural Development Co., Ltd. was set up
  - Improve agricultural infrastructure, enhance the ability of agriculture to resist disasters and ensure harvest, organize the research and promotion of new agricultural technologies, intensify the introduction and adaptive transformation of agricultural machinery, so that the agricultural productivity has been greatly improved.



02 Practices of agricultural modernization by SKIAD

Practices of agricultural modernization by SKIAD

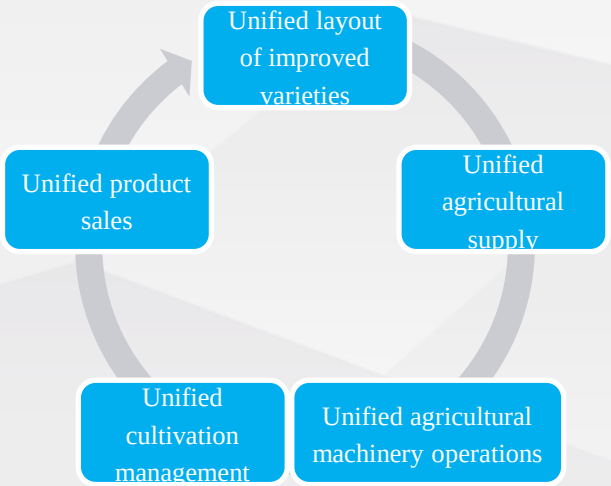
The agricultural development process of SKIAD is also an exploration process of agricultural modernization. Through organized and efficient management of traditional agriculture, SKIAD has applied advanced agricultural machinery and intelligent equipment, launched agricultural technology innovation and integration, implemented standardized and green ecological sustainable production and the integrated operation of production and marketing, thus an agricultural modernization solution is made by SKIAD that focuses on conventional wheat and rice production and integrates the whole industry chain.

2.1 Innovate agricultural management mechanism, and develop agriculture with modern concepts

Aim to develop large-scale management, and innovate agricultural management system

Establish an integrated agricultural management system

Improve interests binding between business entities with a market-based mechanism



Five unities

Four-level management network

Whole industry chain

2.2 Develop the whole-process mechanized and intelligent agriculture, and transform agriculture with modern equipment

- **Establish the introduction and extension mechanism and innovation platform for advanced agricultural machinery**

Formulate management measures for agricultural machinery, and clarify the mechanism for the introduction, experimentation, demonstration, and extension of agricultural machinery. A series of large tractors, large and wide harvesters, pot seedling placement machines, automatic navigation driving systems, ultra-low-volume green prevention and control equipment, and UAV aviation plant protection have been widely used.





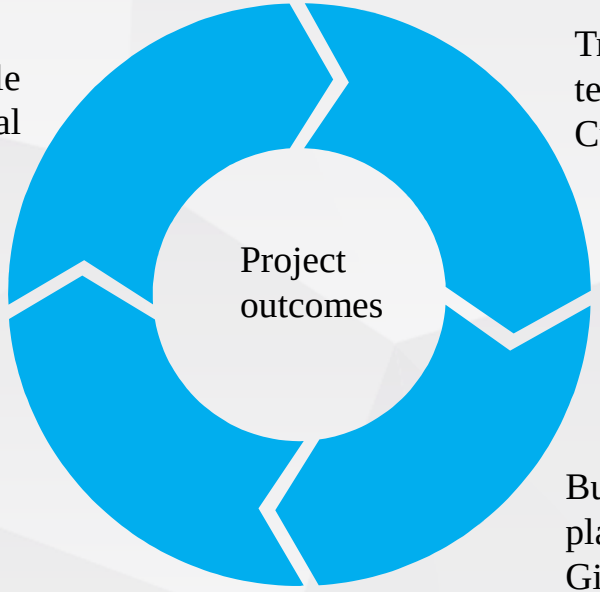



The Sino-German Crop Production and Agrotechnology Demonstration Park （DCALDP）

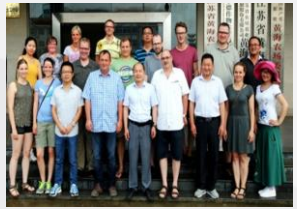
- Under the joint guidance and support of MARA and BMEL, the park was implemented by Yellow Sea Branch of SKIAD, with a view to advance the sustainable development of China's agricultural modernization.

Introduce advanced equipment from Germany and Europe
Accelerate the sustainable development of agricultural modernization.

Integrate Sino-German agricultural machinery and agronomy
Demonstrate a new high-quality farming model



Train on modern agricultural technology
Cultivate modern farmers



Build an international exchange platform
Give into full play the role of Sino-German agriculture as a bridge

Organize the adaptive transformation of agricultural machinery and equipment

Innovate the harvester's rollers, forward and reverse compound planting machinery, reverse rotation belt planting machinery, compound soil preparation machinery, furrowing and ridging machinery, etc., improve the efficiency of agricultural machinery, build high-standard grain drying and storage facilities, the wheat and rice can be dried and put into storage in time after harvesting, and the level of mechanization in the whole process of agriculture has been improved.

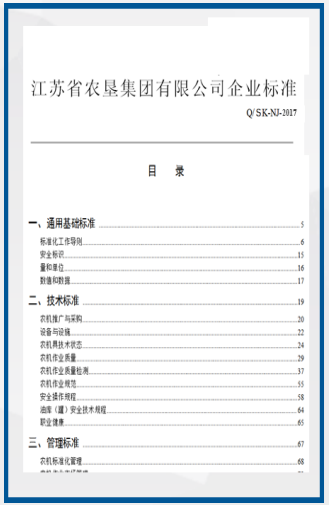
2.2 Implement the whole-process mechanized and intelligent agriculture, and transform agriculture with modern equipment

Establish a quality management system for agricultural machinery operations

Formulate technical standards and process standards for agricultural machinery operations regarding different crops and under different farming modes, and set up a quality management system for agricultural machinery operations with “price based on quality” as the core, so as to ensure that various mechanical operations can be performed under different soil conditions and diverse moisture conditions and provide a strong guarantee for the high-yield and high-efficiency double cropping of rice and wheat.

应对天气变化和土壤类型优化作业程序提高播种质量和进度

土地类型	粘土地	沙土地
作业核心	反旋播种	精量播种
常规天气	“耕翻-旋耕”式土壤耕作机制	“耕-耙-双轴整地播种” “耕-旋-双轴整地播种” 确保播种畦面“平、整、净” 大幅提升农机作业质量确保 早苗、足苗、齐苗 匀苗、壮苗
抢墒天气	履带收割-长刀旋-二次短刀旋式土壤耕作机制	
干旱无灌溉	板茬式旋耕刀旋耕播种一体化原墒出苗作业	



江苏省农垦集团有限公司企业标准

Q/SK-NJ-2017

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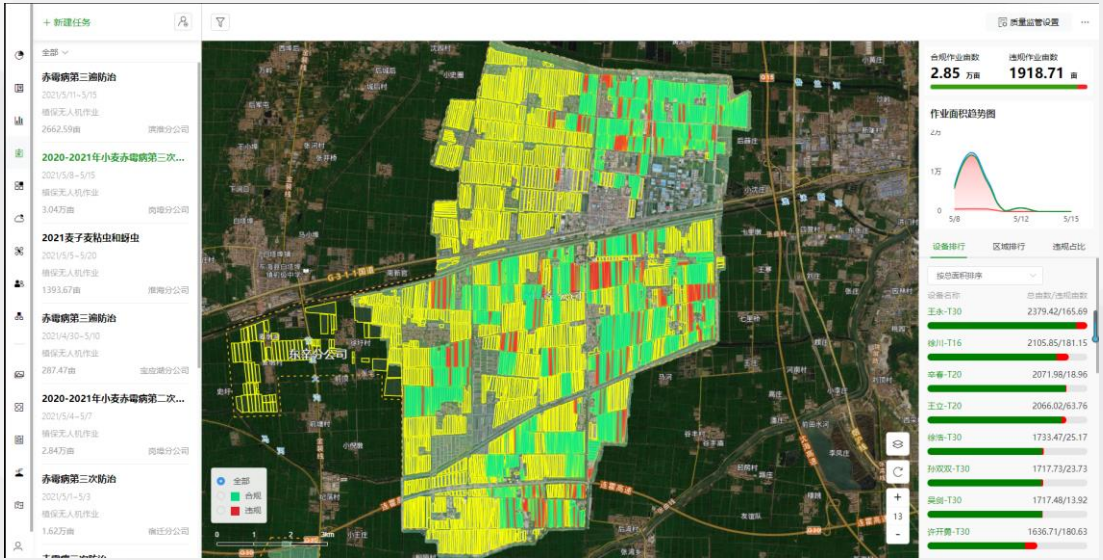
2018 年三秋农机作业质量标准与作业价格挂钩结算表（一）

作业项目	茬口、品种与作业方式	计价指标			计量单位	13 年价格	作业价格（元/亩）	作业质量标准	作业费挂钩标准
一．水稻收获作业（带切草、运粮到场头）	杂交稻收获	正常条件作业			亩	65	65	1、收获损失率杂交稻<1%，粳稻<1.5%。 2、破碎率：种子<0.5%，杂交稻<1%，粳稻<1.5%。 3、收获清洁度>95%。 4、留茬高度 15-25cm（或根据农艺要求）。 5、田头、地边无漏割、无碾压。 6、收获种子田，清理机车无混杂。 7、秸秆切碎长度≥8cm 且抛撒均匀。	1、损失率与破碎率指标每上升 0.1 个百分点，下降作业费 1 元/亩，每下降 0.1 个百分点，提高作业费 0.5 元/亩。 2、运粮费用：正常田块 14 元/亩，烂地运粮 18 元/亩（含在收割费中）。 3、特殊条件水稻收获超出 90 元/亩必须经分公司批准。
		特殊条件作业	烂地				75		
			烂地加倒伏				85		
	粳稻收获	正常条件作业				68	68		
		特殊条件作业	烂地				78		
			烂地加倒伏				88		
	特殊烂地与严重倒伏跑单收					85	由生产区面议		
二．耕地	水稻茬(沙土地)	耕深 16-18cm			亩	25	23	耕到头，耕到边，无漏耕，耕深符合农艺标准，杂草覆盖良好。	1、耕深每少 1 厘米，下降作业费 1 元/亩。耕深下降超过 3 厘米，下降作业费 5 元/亩。 2、漏耕、耕后平整度及草覆盖情况综合评价每扣 3 分，下降作业费 1 元。 3、特殊烂地耕翻作业，每亩超过 45 元/亩须经分公司批准。
	水稻茬（粘土地）	耕深 16-18 cm	正常条件作业			30	29		
			烂地作业			35	36．5		
			特殊烂地作业				由生产区面议		
	粘土	第一次旋耕	慢 1 档旋耕		亩		28	1、旋耕深度达标，第一遍 10-12 厘米；第二遍 6-8 厘米，误差<1 厘米。	1、旋耕深度每下降 1 厘米，下降作业费 1 元/亩。
			正常旋耕			27	26		
		第二次	慢 1 档旋耕				21		

2.2 Develop the whole-process mechanized and intelligent agriculture and transform agriculture with modern equipment

- **Establish an integrated information platform for agricultural machinery and an agricultural machinery supervision network**

Intensify the management of modern agricultural machinery, achieve real-time supervision of agricultural machinery operations and dynamic verification of agricultural machinery operations, accelerate agricultural modernization with technology.



2.3 Improve agricultural technology research and application extension system, and use technology to upgrade agriculture

- **Establish a four-level agricultural technology extension systems in "company headquarters, branches, management areas, and production areas"**

Give full play to the "baton" role of assessment, enhance the management of agricultural production process, guide, inspect and correct the key links and key technologies of agricultural production, formulate an incentive mechanism of "collective operation, unified management, individuals taking responsibilities, rewards and punishments", effectively improve the sense of responsibility of managers, and ensure the accuracy and implementation of extension measures.

Agricultural technology
Promotion and demonstration
Service network

Incentive mechanism

SKIAD
Branch companies
Management areas
Production brigades

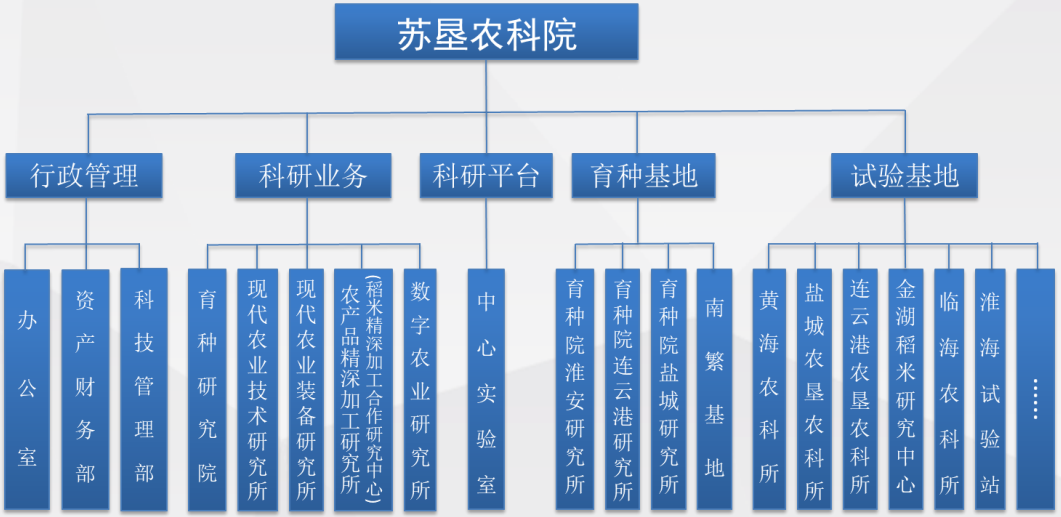
农发公司
↓
分公司
↓
管理区
↓
大队

集体经营
统一管理
责任到人
奖惩兑现

Collective operation
Unified management
Individuals taking responsibilities
Rewards and punishments

Establish a research mechanism for agricultural technology innovation

Set up an open platform for integrated innovation of "enterprises, universities and research institutions"



Make breakthroughs in new varieties, new products, and new technologies

- Varieties for rotation between rice and wheat
- High-yield cultivation technology
- Combination of agricultural machinery and agronomy
- Green pest control
- Sustainable resources utilization

2.3 Improve agricultural technology research and application extension system, and use technology to upgrade agriculture

- **Innovate technology training and promotion model, establish a growth channel for young technicians, and cultivate a high-quality agricultural technology promotion team**

Training courses for new-type vocational farmers

On-site training for large-scale growers

Agricultural machinery skills competition

Publicity by model workers (craftsmen)

2.4 Establish a whole-process control system for the quality of agri-products, and use quality to guarantee agriculture

- **Establish a quality and safety control system of agri-products with full participation, full element control, and full process management from “farm to table”**

Source can be traced — **Risk can be controlled** — **Flow can be tracked** — **Information can be inquired** — **Responsibility can be investigated**

2.5 Demonstration and extension of “SKIAD plan”

- Actively participate in the transfer of rural land, successively implement large-scale operations in 8 cities and 26 counties in northern Jiangsu, demonstrate and extend the specialized, standardized, large-scale, and intensive operation model of SKIAD, with significant social benefits achieved.
- Actively advance the actions of “enterprises and villages join hands to realize revitalization” and explore the development of higher-level agricultural modernization in the whole province.
- Establish Suken Modern Agriculture Development Co., Ltd. in Suzhou City, innovate and set up an intelligent wheat and rice planting model to solve the problems of “who grows” and “how to grow” in developed areas.

As a state-owned enterprise, make due contributions to implement the rural revitalization strategy in the whole province
Expand more development space for the transformation and upgrading of modern agriculture by SKIAD

THANKS

谢　谢　聆　听

Take the lead in modern agriculture, and offer safe food