非洲区域菌草技术的应用及其对实现可持续农业和可持续发展目标的贡献研讨会

Workshop on "Applications of Juncao Technology and Its Contribution to the Achievement of Sustainable Agriculture and Sustainable Development Goals in Africa"

菌草技术应对气候变化最新研究进展及在非洲的应用

The Latest Research Progress for Application of Juncao Technology to Address Climate Change and Its Application in African Countries

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1. Application of Juncao Technology to Address Climate Change

Comprehensive and efficient utilization of

light, water and land

Enabling circular production involving

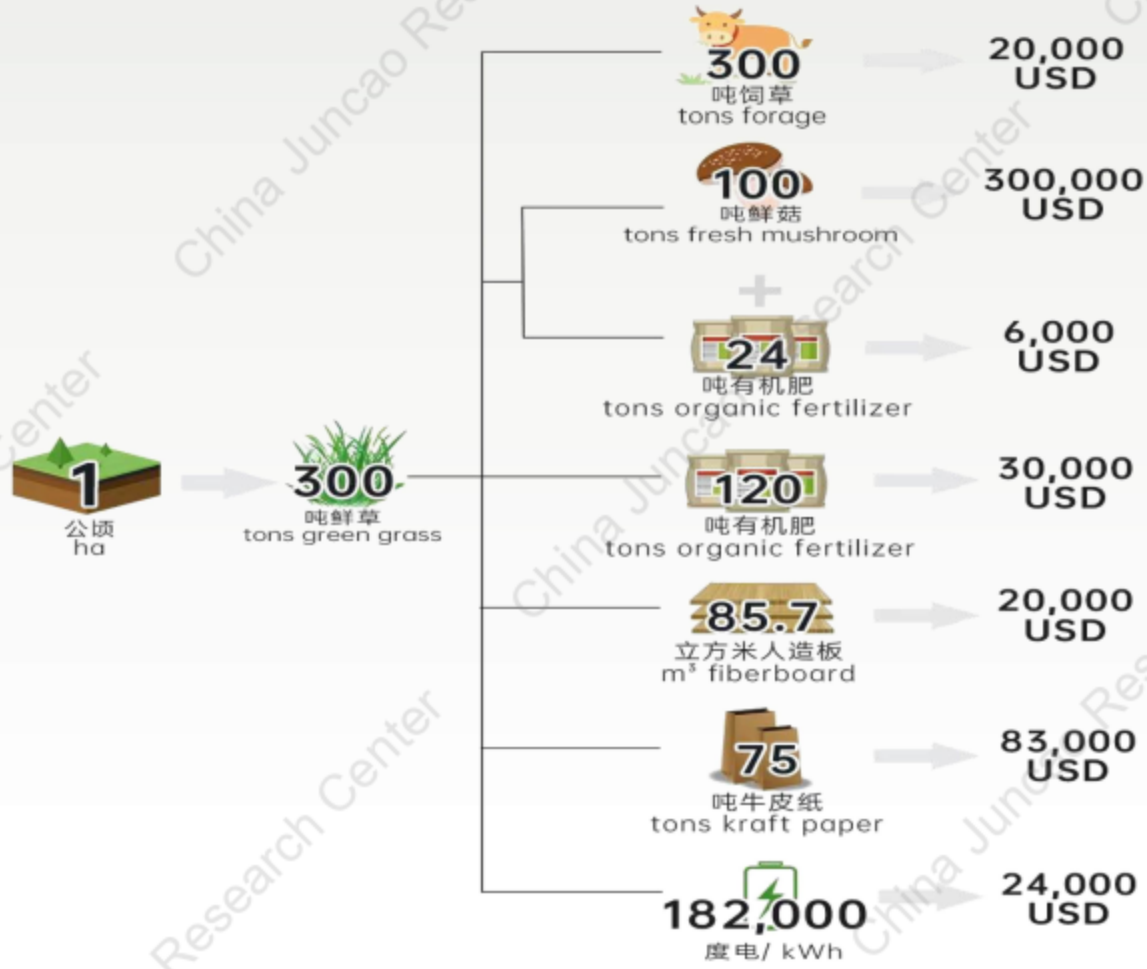
plants, animals and mushrooms

Improvement in

ecology, food and energy security

Integration of

environmental, economic and social benefits



Economic Value of Different Applications

1.1 Develop Juncao industry to enhance **Food Security** by establishing a more resilient high-quality protein food production system

Features of Juncao Technology

Utilization of marginal lands

Juncao grass can be planted at the non-arable lands, improving local supply capacity, so as to reduce the import of mushrooms and forage.

Strong resistance to extreme weather

Compare with silage corn and other crops, Juncao grass will survive better when encountering extreme weather including drought, flood, cold, strong wind, hail etc.

User-friendly techniques

The simplified technology enables a wider participation of small-holder farmers in production

Short production cycle

Juncao grass can be utilized after 3 months of planting

One time investment for long term benefit

In the tropical and subtropical areas, planting once can continue to harvest for more than 20 years with small investment and high profits

High-quality products

Juncao grass planting requires no pesticides and has a high crude protein content, producing high-quality feed and mushrooms

Mushroom Production

10 m² mushroom trench

1200 kg fresh mushroom for **4 production seasons**

2400 US$ annual income

* Farm price of mushroom at **2 US$/kg**

“Small yet Smart” livelihood projects

Livestock Production

1 ha Juncao grass
20 cattle or 200 goats

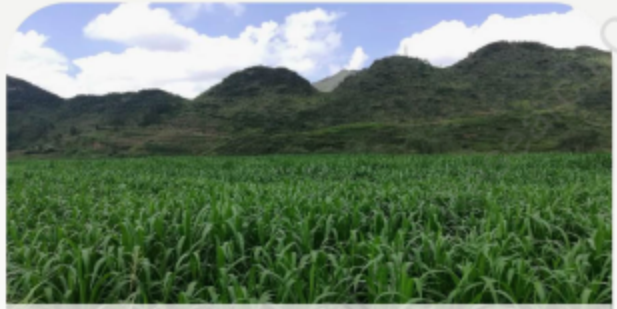
Total Crude Protein Output/ha	Signal Grass	Silage Corn	Giant Juncao Grass
	 1	 ×2.8	 ×20.6
Yield	27.0 t/ha	52.5 t/ha	**237.0 t/ha**
Crude Protein Content	5.4%	7.8%	**12.7%**

1.2 Juncao ecological management techniques to enhance

Ecological Security as a quick, efficient, low-cost and sustainable ecological restoration measure

Juncao Grass Green Barrier Scenarios

Island & Beach



Rocky Desertification Area

Desertification Area

River Bank & Flood Land

Abandoned Mine Land

Saline & Alkaline Land

Soil Erosion Area

Sand Fixation

Planting period	3 Months	3 Years	3 Years
	JUJUNCAO Giant Juncao Grass	Haloxylon (Shrub)	Willow Trees (Arbor)
Sand Fixing Area per plant	> 8 ㎡	3-4 ㎡	5-6 ㎡
Total Water Consumption/ha	2,700-3,000 tons	1,800-2,200 tons	7,200-8,100 tons
Soil Organic Matter Increased at first year	30%-60%	5%-15%	15%-25%

Data Source: FAFU, Juncao technology desertification control experiment base, Inner Mongolia

Desertification Control

Growth Period: 115 days

Biomass
Root : Shoot

0.7 : 1.0

Sand-fixing volume

11.45 m^3

Sand-fixing surface area

18.52 m^2

Data Source: FAFU Juncao technology desertification control experiment base, Inner Mongolia

Carbon Fixation

300 t·hm⁻² ▸ **150-200 m³·hm⁻²** ▸ **7.5-10 t·hm⁻²**

Giant Juncao Grass

Average value in the subtropical regions

Fiberboards

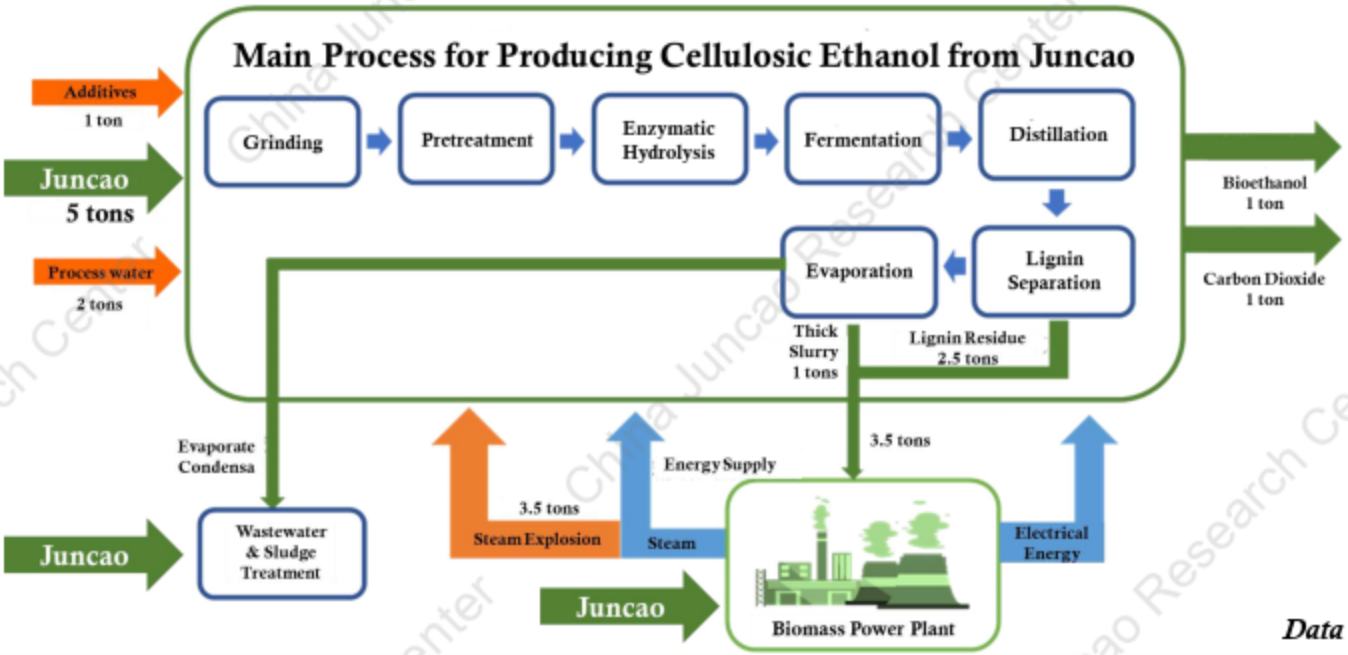
Data Source: FAFU & collaborative enterprise

Carbon Sequestration

Caculation Method: IPCC First Order Decay Method

1.3 Develop Juncao industry to enhance Energy Security: high carbon sequestration, multifunctional biomass energy

Biomass Energy—Cellulosic Ethanol



Data Source: SDIC BIOTECH

Value without carbon credits

US$16,000/ha

100 million tons Juncao grass (dry matter) will increase farmers' income by 2.8-3.5 billion US$.

Juncao cellulosic ethanol

Carbon Negative

1 ton of products will reduce 3.5 tons CO_2 emission compared to gasoline.

Driving the local

Industrial Upgrading

10,000 tons of Juncao cellulose ethanol will stimulate 14 million US$ investment, with an annual output of 11 million US$.

Biomass Energy— electricity generation

Types	Calorific Value (Cal/kg)	Ratio
Raw Coal	5000	1
Giant Juncao Grass	3580	0.71

Features of Juncao biomass power generation

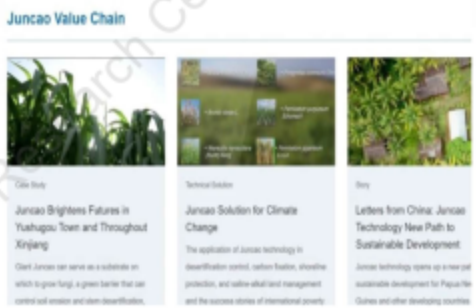
- Carbon neutral
- Sustainable and renewable energy
- Stable power generation
- Enhancing ecosystems and biodiversity
- Improving air quality and health

The electricity generated from
1 ha Juncao grass equals to

tons raw coals

Using average yield in the subtropical regions

Sustainable Development Goals



Juncao technology provides an effective and comprehensive solution that plays a positive role in the implementation of the 13 Sustainable Development Goals (SDGs).

The promotion and application of Juncao technology aims at helping developing countries further enhance their independent development capabilities.

2. Launch of Website: Juncao World

www.juncao.org

Funded by UNDESA

What you can know from this website…

Who We Are

- Our Team
- About Us
- Chronicle of Events
- Contact Us

What We Do

- Juncao Mode
- Demonstration Base
- Partner
- Footprints
- Juncao Cloud Platform

Our Impact

- Sustainable Development Goals
- Picture Collection
- Video Center
- Juncao Stories

Knowledge Hub

- Juncao Knowledge
- Publications
- Questioning Session

Training and Education

- Training Courses
- Previous Training Courses
- Education

News and Events

- News
- Upcoming Events
- Seminar

Quick Connection

- Demonstration Base >
- Capacity Building Seminar >
- Education and Research >
- Partners >

For Connecting Juncao Technology with the World

Promotion Information

Region	Country Qty
Africa	45
America	16
Asia	30
Europe	7
South Pacific	8

China Aid Rwanda Agricultural Technology Demonstration Center

Detailed Report

The China Aid Rwanda Agricultural Technology Demonstration Center was completed in 2011...T project has held a total of 57 training courses, with

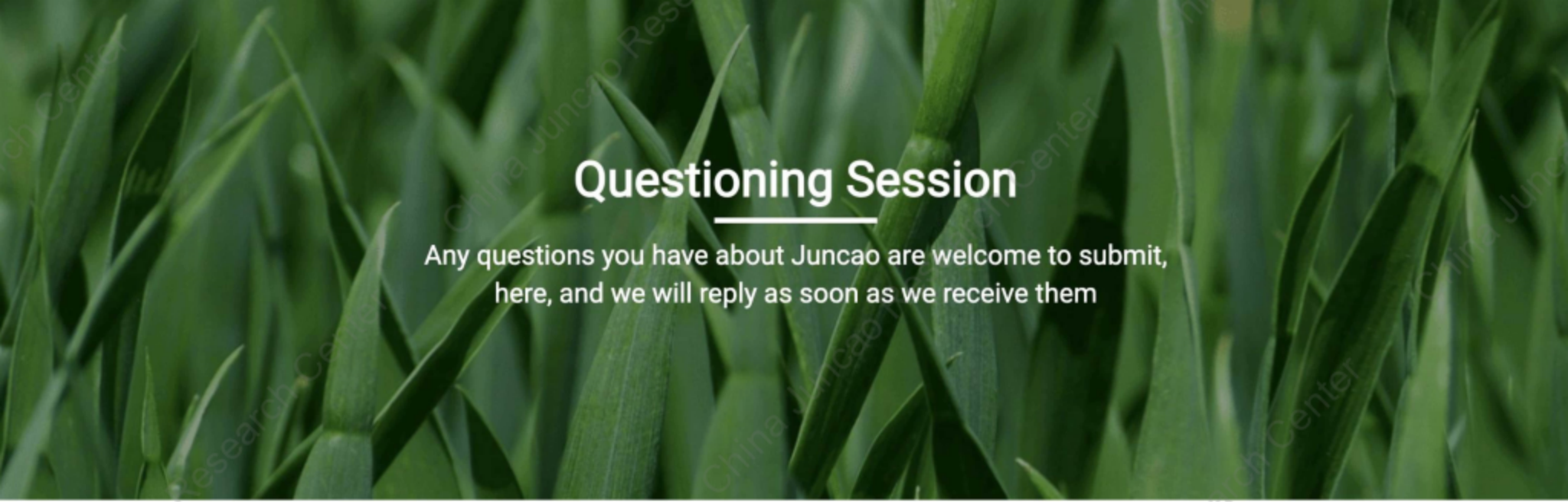
Expand

Cedara Juncao Technology Research & Training Center

Detailed Report

The Cedara Juncao Technology Research and Training Center is located at Headquarter Department of Agriculture and Environmental Affairs

Expand



Questioning Session

Any questions you have about Juncao are welcome to submit, here, and we will reply as soon as we receive them

Stay tuned...

More functions to be developed!

发展菌草业 造福全人类

Develop Juncao Industry for the Benefit of All Mankind

DATA source from V.P. Dongmei Lin, Prof. Zhanxi Lin, Prof. Fangjie Zhu, Dr. Jin Li, Ms Fan Yan, Ms Yulin Wan, Mr. Hui Lin, Mdm Xiuming Cao, Mr. Hengyu Zhou
Please indicate the information source for citations

Thank You!