

MAP 2021

Green Development Report

China Agricultural Green Development Research Center
Sinochem Modern Agriculture Co., Ltd.

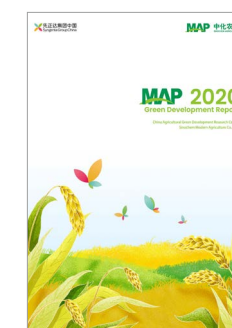


To enable every one in the food chain
ecosystem to prosper

Foreword

In 2021, Sinochem Agriculture Modern Agriculture Platform (MAP) released the *MAP 2020 Green Development Report* development achievements through the promotion of modern agricultural services

In the *MAP 2020 Green Development Report*, MAP has systematically developed the indicators, conducting nationwide surveys of representative crops, and assessing

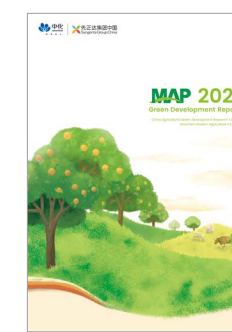


MAP 2021 Green Development Report

In this report, we have made a comprehensive upgrade of the Agricultural Green

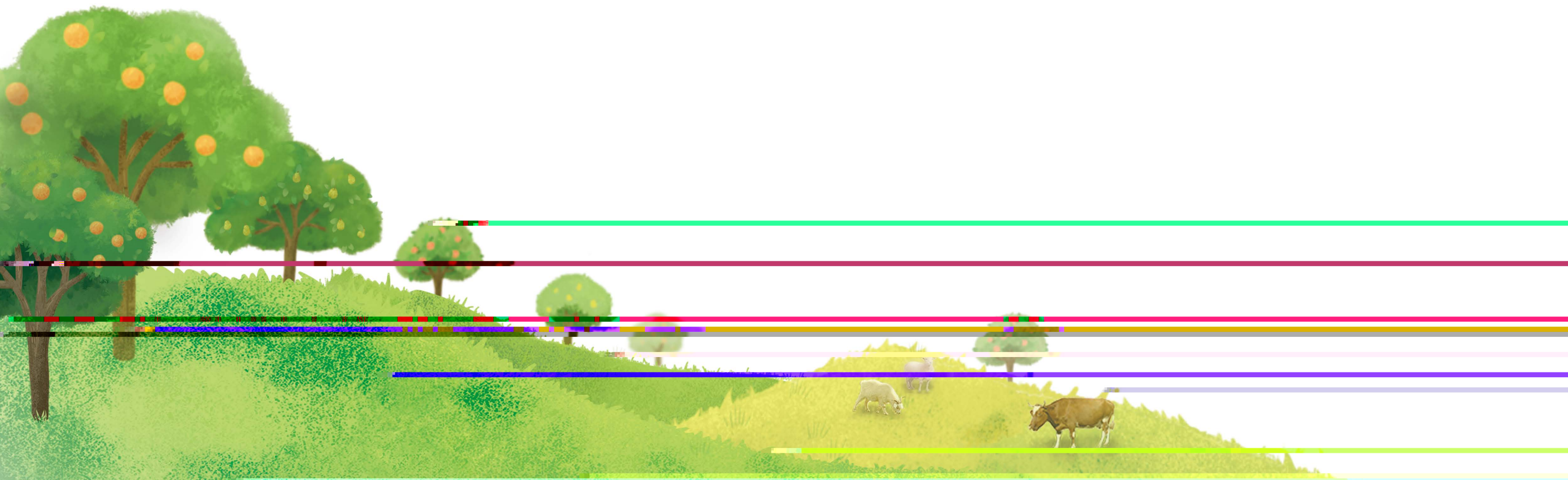
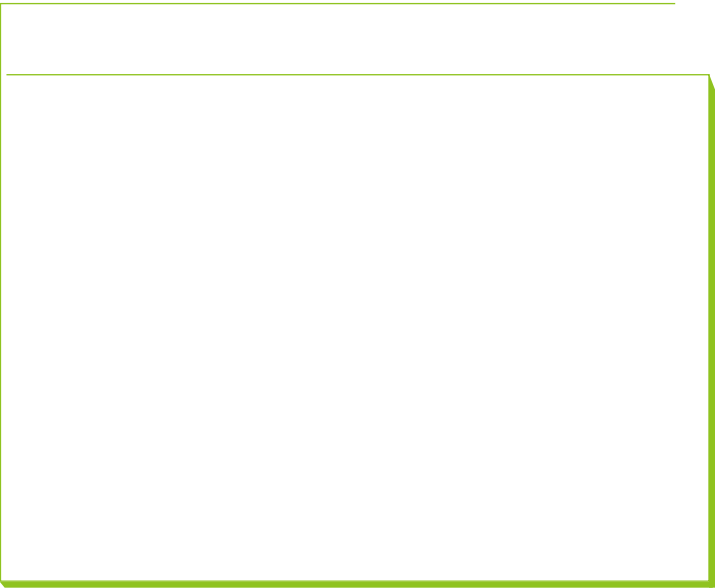
performances of some of the indicators, allowing report readers to intuitively see how

Finally, this report also includes some stories and moments happened during the



March 2022

Contents



Messages from the Management



the instructions of Xi Jinping, we strive to vigorously implement the rural

environmentally friendly ways of production to reduce water consumption,

The MAP strategy is in line with the current development of China, especially

Sinochem Holdings, especially the requirement on strengthening and expanding

Ning Gaoning

Secretary of the Party Committee & Chairman, Sinochem Holdings
Chairman, Syngenta Group

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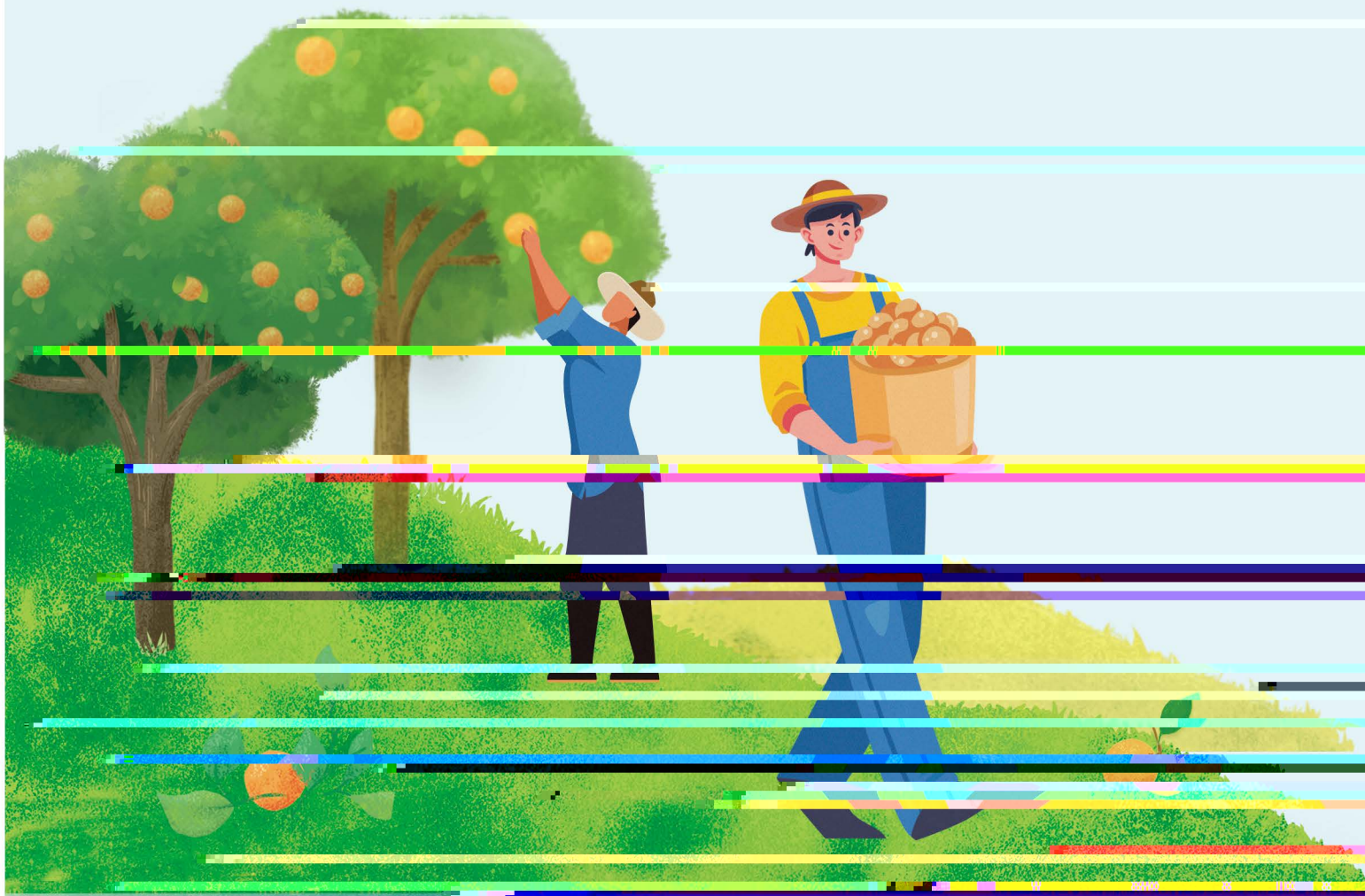
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Erik Fyrwald



About Us



- Company Profiles
- Green and Sustainability Strategy
- The MAP Model
- MAP Story of the Year

Green and Sustainability Strategy

The Good Growth Plan of Syngenta Group: Pillars and Targets

unwavering commitments, Syngenta Group has launched the new Good Growth Plan, setting four new



Accelerate innovation for farmers and nature

\$2_{bn}



Strive for carbon neutral agriculture

3_m ha

Strive for the lowest residues in crops and the environment

. 1 Currently Syngenta Crop Protection and Syngenta Seeds only.



Help people stay safe and healthy

8_m



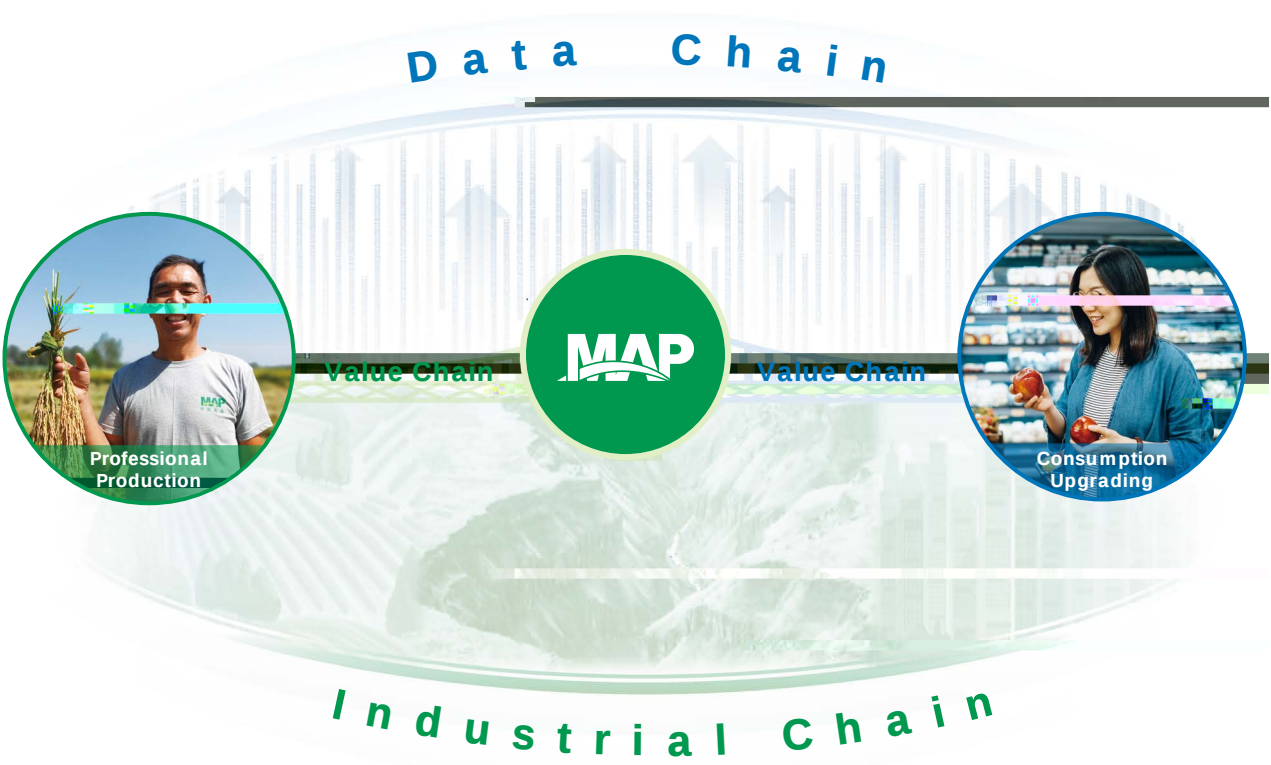
Partnering for impact



Through the Good Growth Plan, Syngenta Group supports the

MAP Business Model

From MAP Technical Service Centers and MAP Farms across China, MAP promotes the adoption of



MAP Story of the Year

MAP Supports Poverty Alleviation

Ar Horqin Banner, situated in Chifeng, Inner

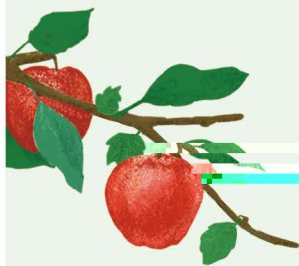


The Sinochem Holdings MAP Poverty Alleviation Team was

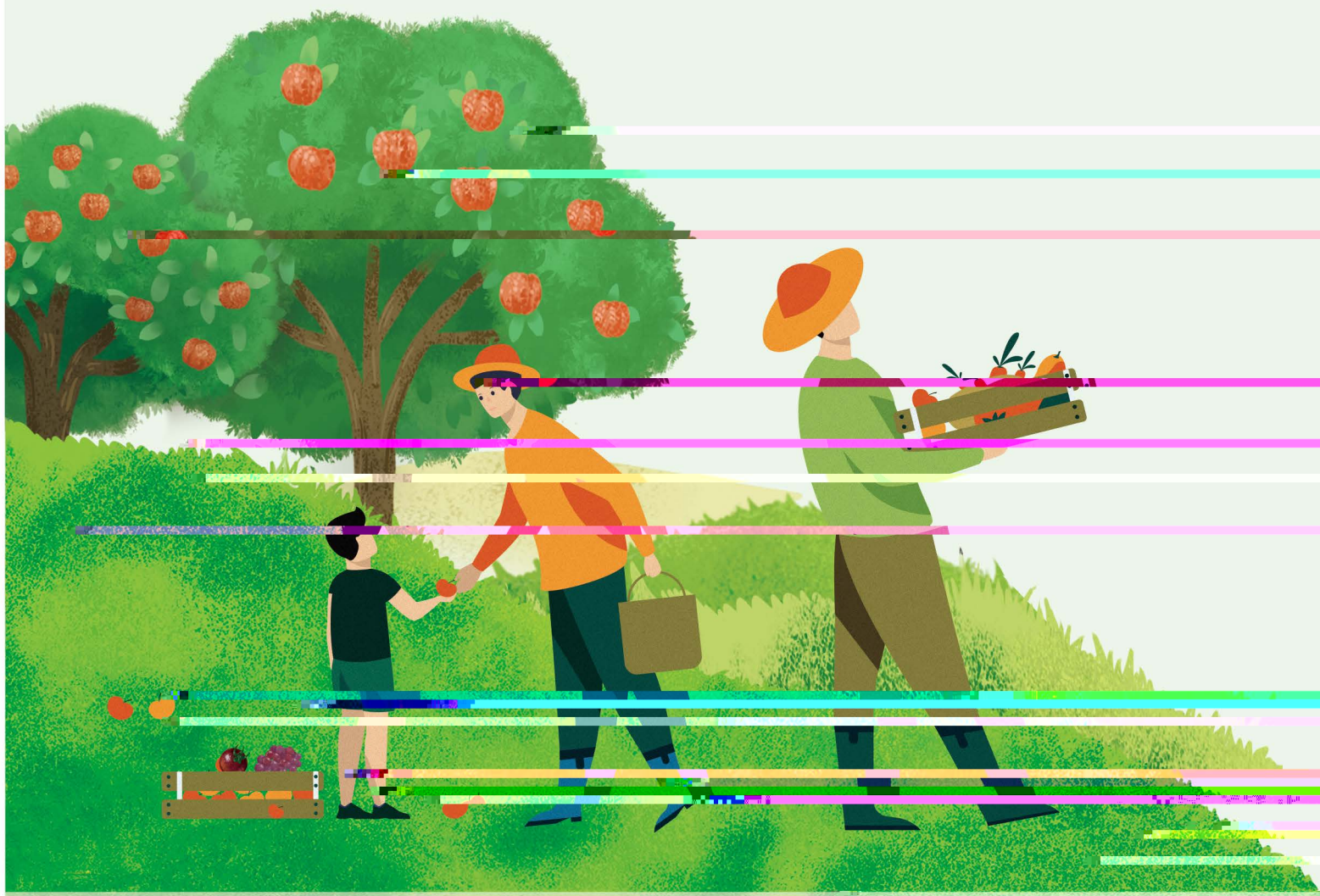


MAP Technical Service Center was on display at the



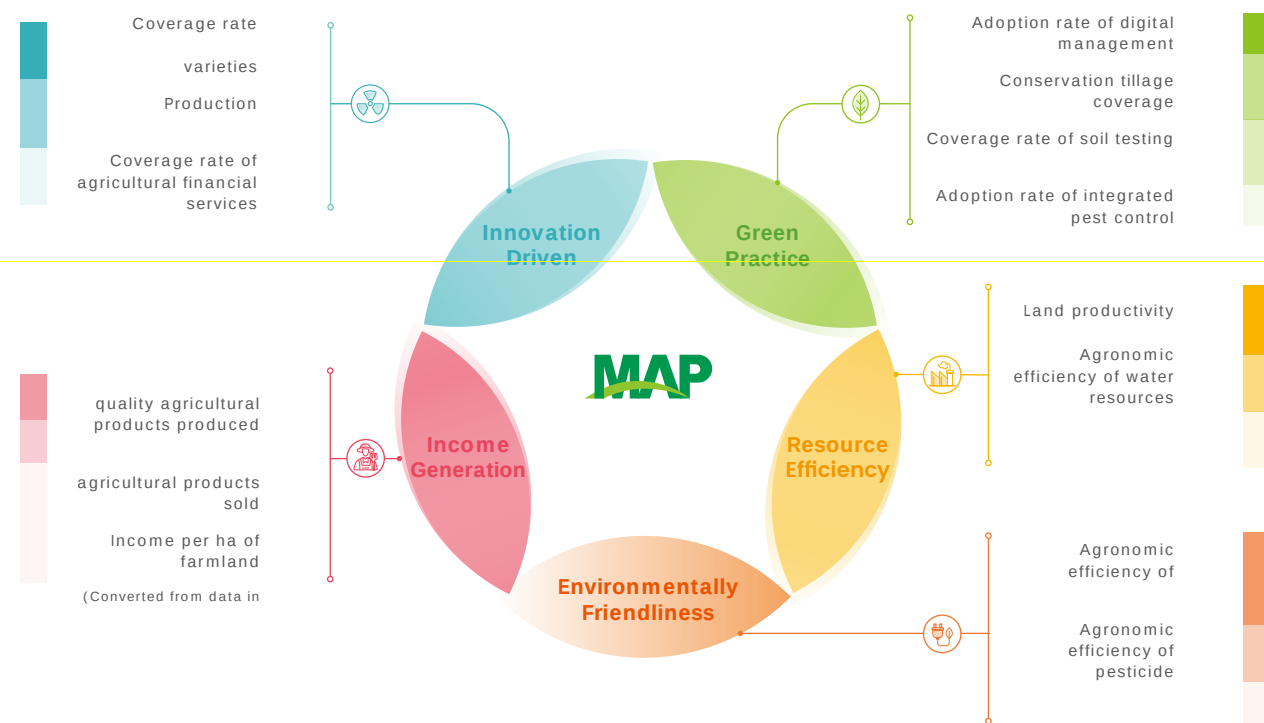


MAP Green Development

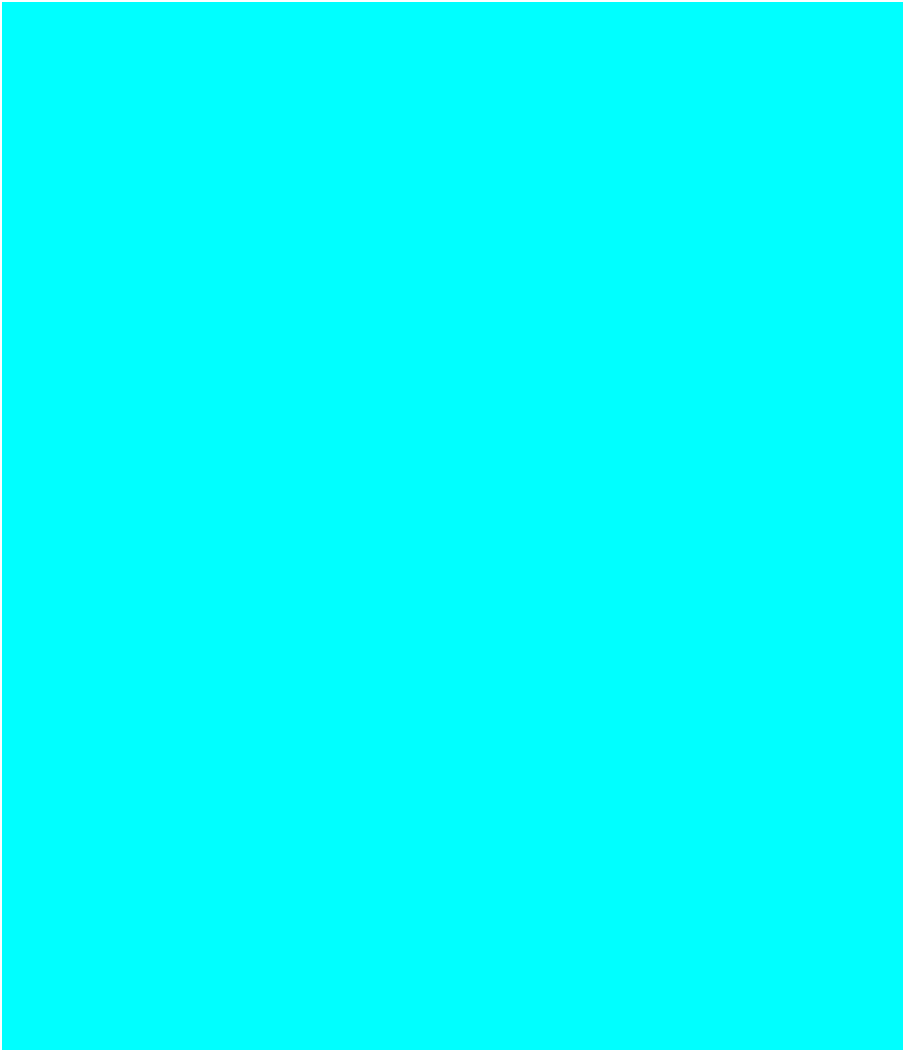


MAP Agricultural Green Development Index	
The Agricultural Green Development Survey	
Driving Development with Technological Innovation	20
.....	
.....	
Developing Environmentally Friendly Agriculture	
.....	

the 2021 MAP Agricultural Green Development Index to cover more dimensions



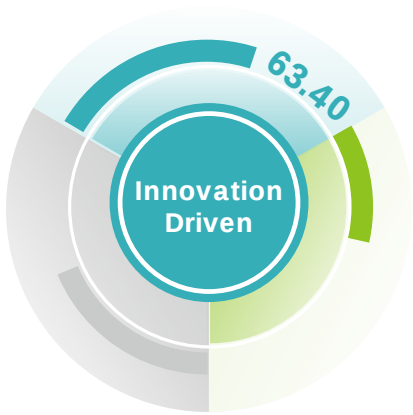
The diagram illustrates the flow of agricultural production and income from input to output for two scenarios: Conventional and Digital. The diagram is divided into two main sections: 'Production' (top) and 'Agricultural services' (bottom). The 'Production' section shows the flow from 'Land productivity' to 'products produced' and 'Income per ha of farmland'. The 'Agricultural services' section shows the flow from 'Land productivity' to 'products produced' and 'Income per ha of farmland'. The diagram uses color-coded flows to represent different inputs and outputs.



Driving Development with Technological Innovation

The Ministry of Science and Technology issued the

Survey Findings



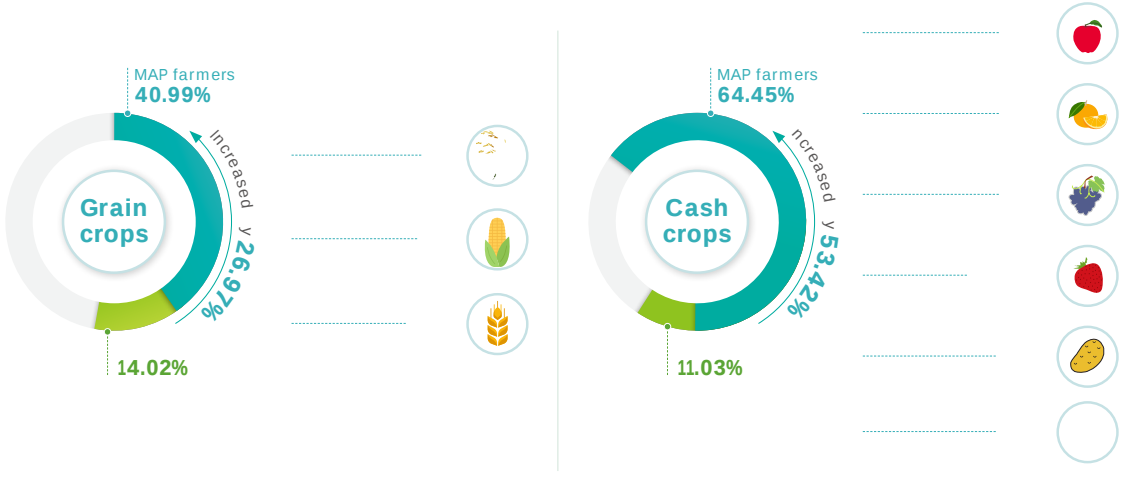
Indicator Interpretations

Production standardization rate

We need to promote the cultivation of good varieties, quality improvement, brand building and standardized production.

The roadmap for achieving standardized production:
chain of modern agriculture, following the principles of new standards when there are no existing standards, and

—The Implementation Plan for the Cultivation of Superior Varieties, Quality Improvement, Brand Building and



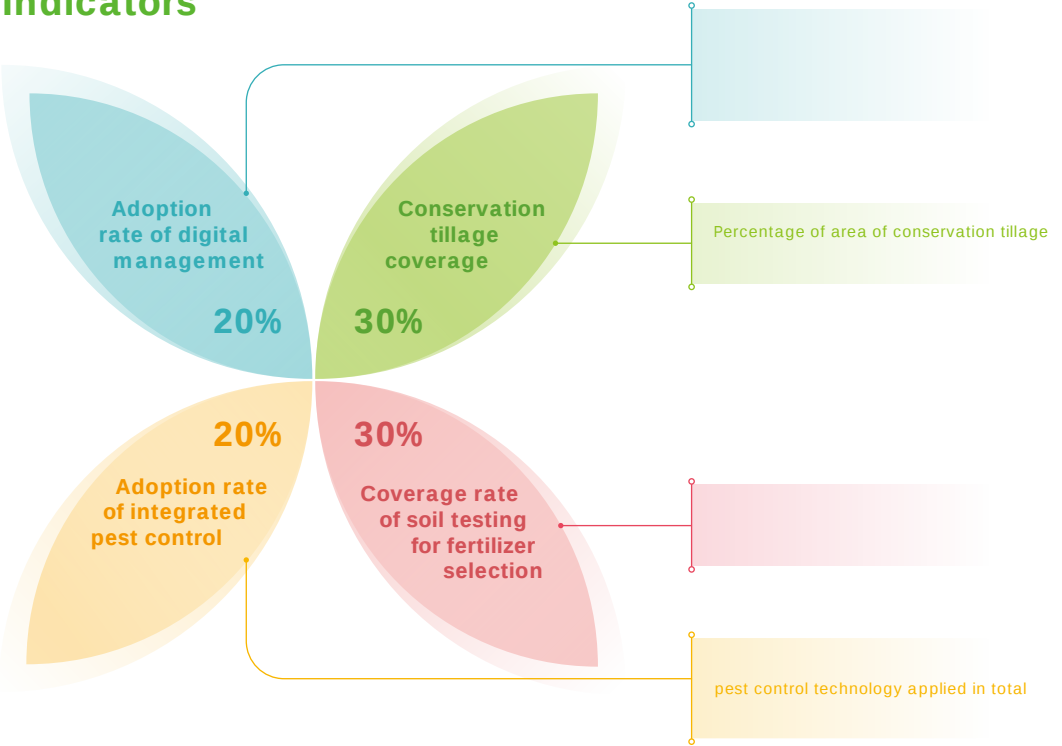
Boosting Efficiency with Green Practices



Xi Jinping pointed out that the promotion of green agricultural development is a profound revolution in the



Indicators



Indicator Definitions

	Adoption rate of digital management	Digital management refers to helping farmers improve productivity through GIS remote sensing, accurate weather forecasting, crop
	Conservation tillage coverage	Conservation tillage techniques include less tillage, no tillage, straw
	Coverage rate of soil testing for fertilizer selection	
	Adoption rate of integrated pest control	Integrated pest control refers to controlling the loss of pests and diseases through technologies and methods such as ecological regulation,

Survey Findings

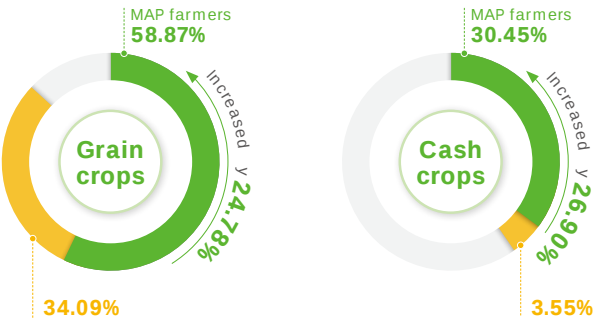


Indicator Interpretations

Adoption rate of digital management

MAP provides farmers with a

various practical agricultural functions, including GIS remote sensing to monitor crop growth,



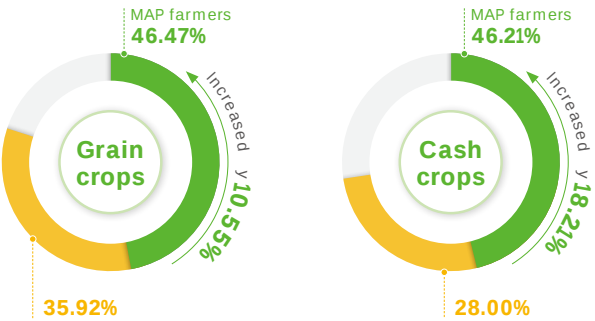
Conservation tillage coverage

MAP actively promotes conservation tillage technology and provides farmers with

and supporting technologies,

fertility through measures such as

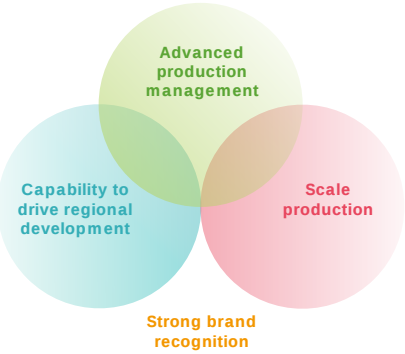
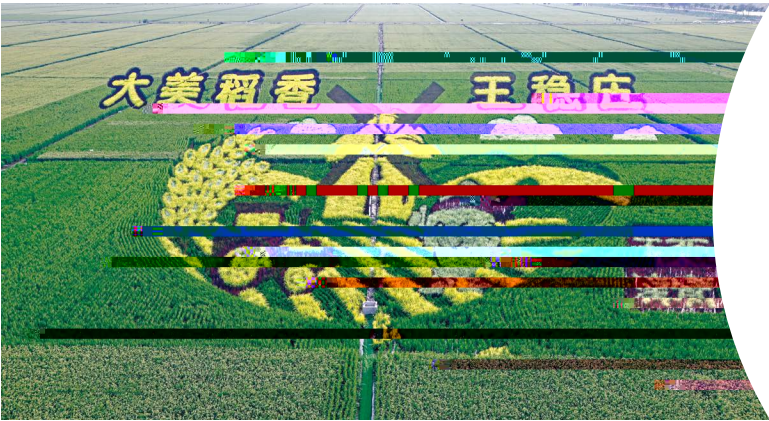
and green mulching planting,





Leading Green Development with VQB-S

the Ministry of Agriculture and Rural Affairs as an Outstanding Case of National



Farm successfully developed a green rice production technical solution and turned



Ensuring Soil Health with Intelligent Diagnosis



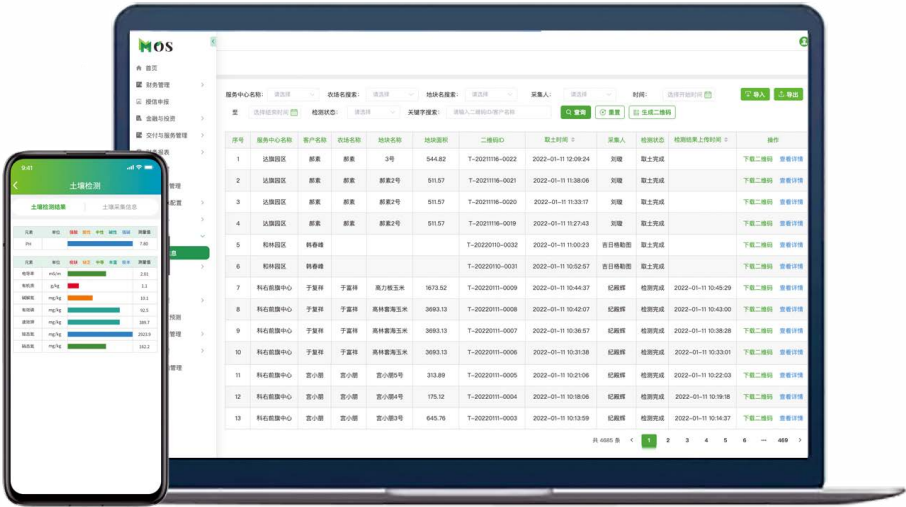
MAP automatic soil sampling vehicle

Soil testing service provides the foundation for MAP to provide farmers with

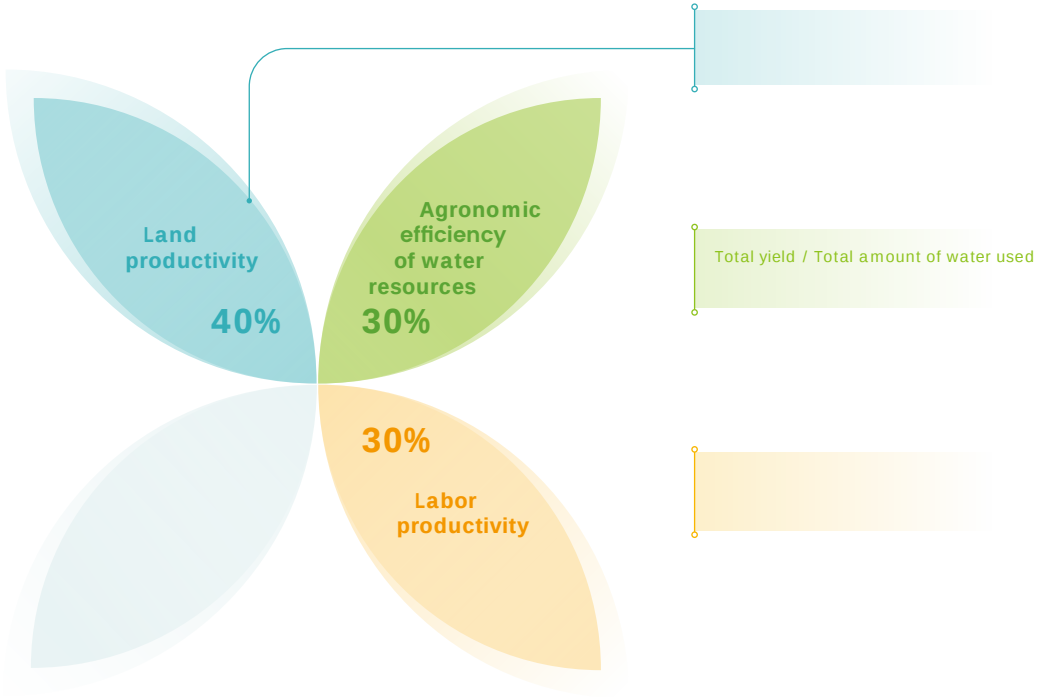
same time they are generated, while agronomists and farmers receiving a

At present, the MAP Soil Big Data Platform has covered soil

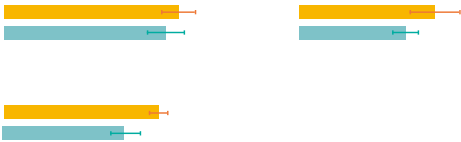
MAP Soil Big Data Platform



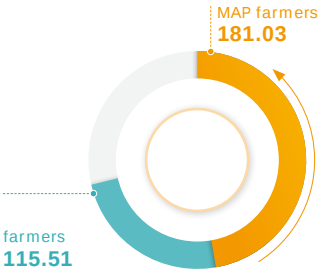
Transforming Towards
Resource Efficient Agriculture



Indicator Definitions



shortage commonly found in in rural





Drops of Sweetness: Water Saving Production of the Chu Orange



Balancing the need to saving water and the need to ensuring enough water for the many times a day, and to what amount? In 2021, MAP implemented a precision

The principle of precision irrigation depends on weather conditions, soil conditions,

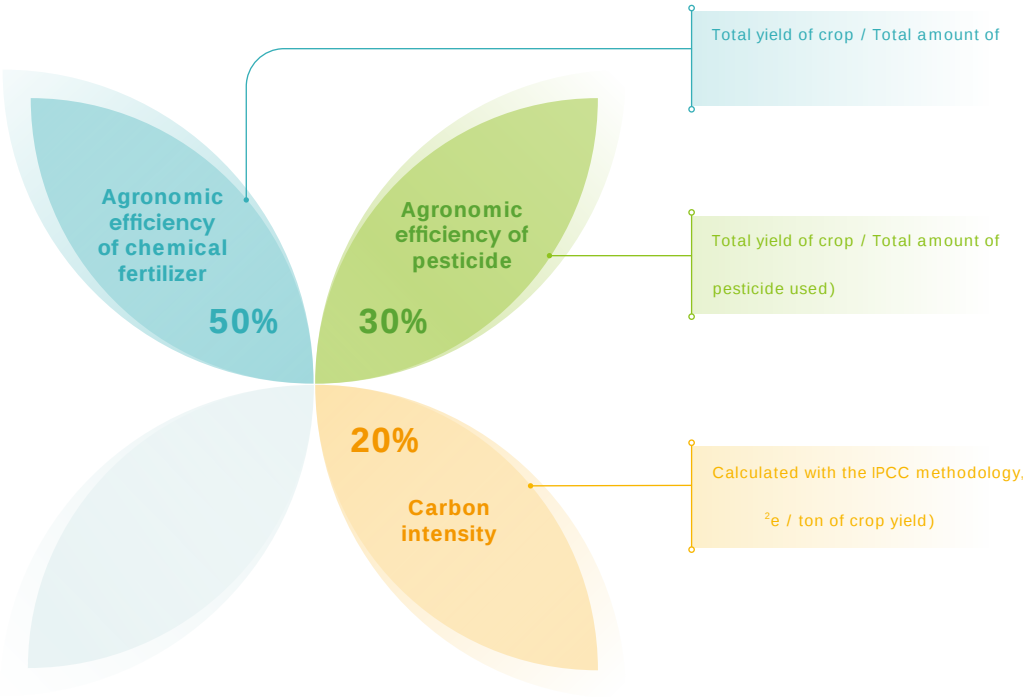
MAP monitors changes in weather conditions and soil moisture readings in real time through weather meters, moisture meters, tensiometers and other IoT

Precision irrigation also needs the understanding of the water retention



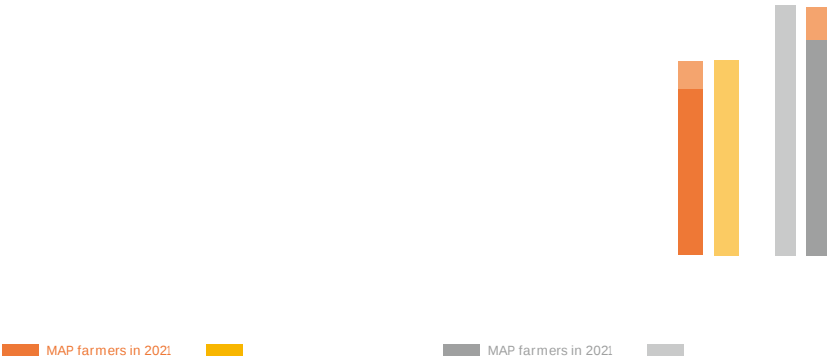
MAP strives to promote innovative and green agricultural technologies to help farmers reduce the use of pesticide

Indicators



Indicator Interpretations

Pure Volume of Nitrogen Fertilizers Used and Pesticide Usage



The Pure Volume of Nitrogen Fertilizers Used for Grain Production





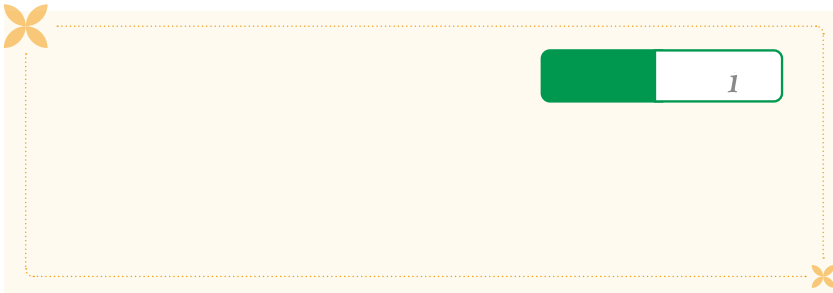
MAP beSide: Building A Brand with Full Traceability

growing solutions and modern management approaches, and in accordance with of strict quality and safety control, as well as green and clean production principles, MAP provides

quality and delicious agricultural

the whole value chain, including growing, harvesting, warehousing,

services and quality standard



MAP beSide aims to provide customers with better quality grains and traceability service, and at the same time, to support the capacity building at the grow, production and sale stages of the crop.

President of Syngenta Group China, President of MAP and Digital Agriculture

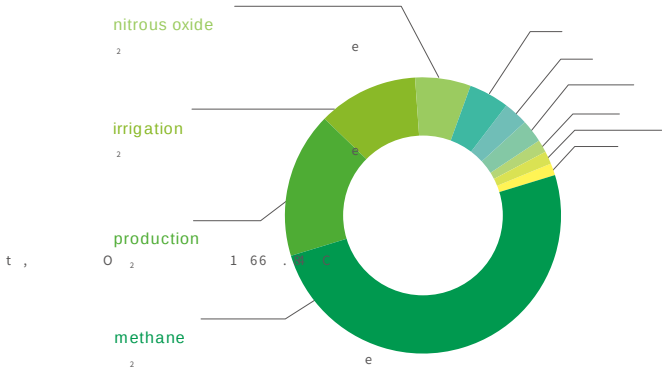


In the second half of 2021, MAP conducted a greenhouse gas(GHGs) emissions assessment of the MAP

Life Cycle Assessment methodology, we assessed the GHGs emission sources in the rice production

soil), and calculated the relevant

the extraction of agricultural raw

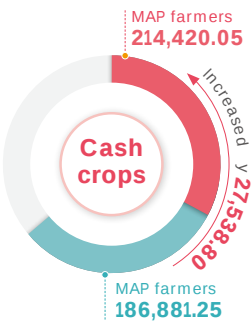
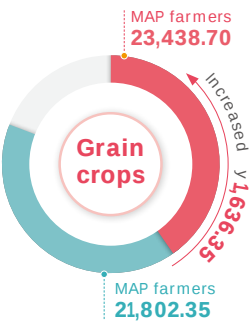
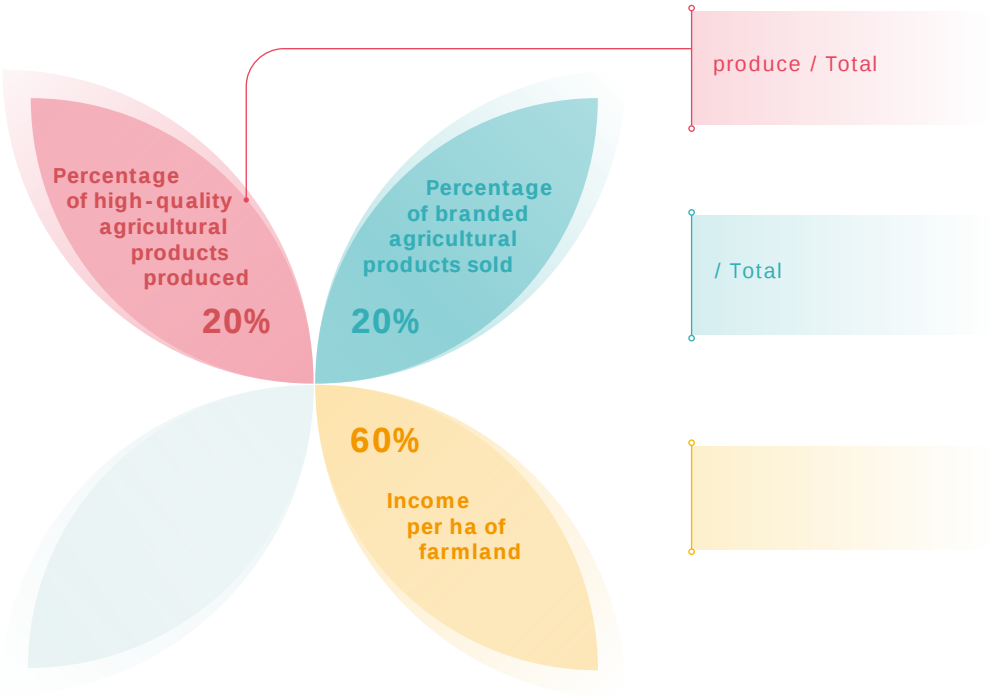


2.0% lower methane emissions and 4.4%

Historical data show that the GHGs emissions of a single crop of rice in the North China Plain are

40.20%

Ensuing Both Good Harvest and Good Income



Among the grain crops,





High- moisture Corn Making a Better Feed Choice

Corn is an important feed crop, and is

2021, many areas in China experienced

harvested with too much moisture and does not get aired and dried in time, mildew will occur during storage, which

pollute the feed and cause serious health

is an energy rich feed, which is corn

rolled or crushed and wrapped up for wet

with dry corn, HMC not only saves on

farmers to have greater yield potential

Leveraging its whole industrial chain

production process with full control of

quality, harvesting method, rolling

plant in Dongying City, Shandong

HMC processing plants in the province, which have provided a total of over



HMC feed products



Award-winning Tomatoes: Full of Flavor

the Sweet Dimple Cherry Tomato, in Shanghai, presenting



YOOM tomatoes



MAP cooperated with the Seed

tomato, as their new Chinese name suggests, has a unique sweetness

tomato varieties, the YOOM variety,

named as Sweet Dimple Cherry

Both varieties are produced under

The YOOM tomato has won the Gold Award for Innovation at the Berlin Fruit Logistica and the

in anthocyanins, vitamin C and



Afterword

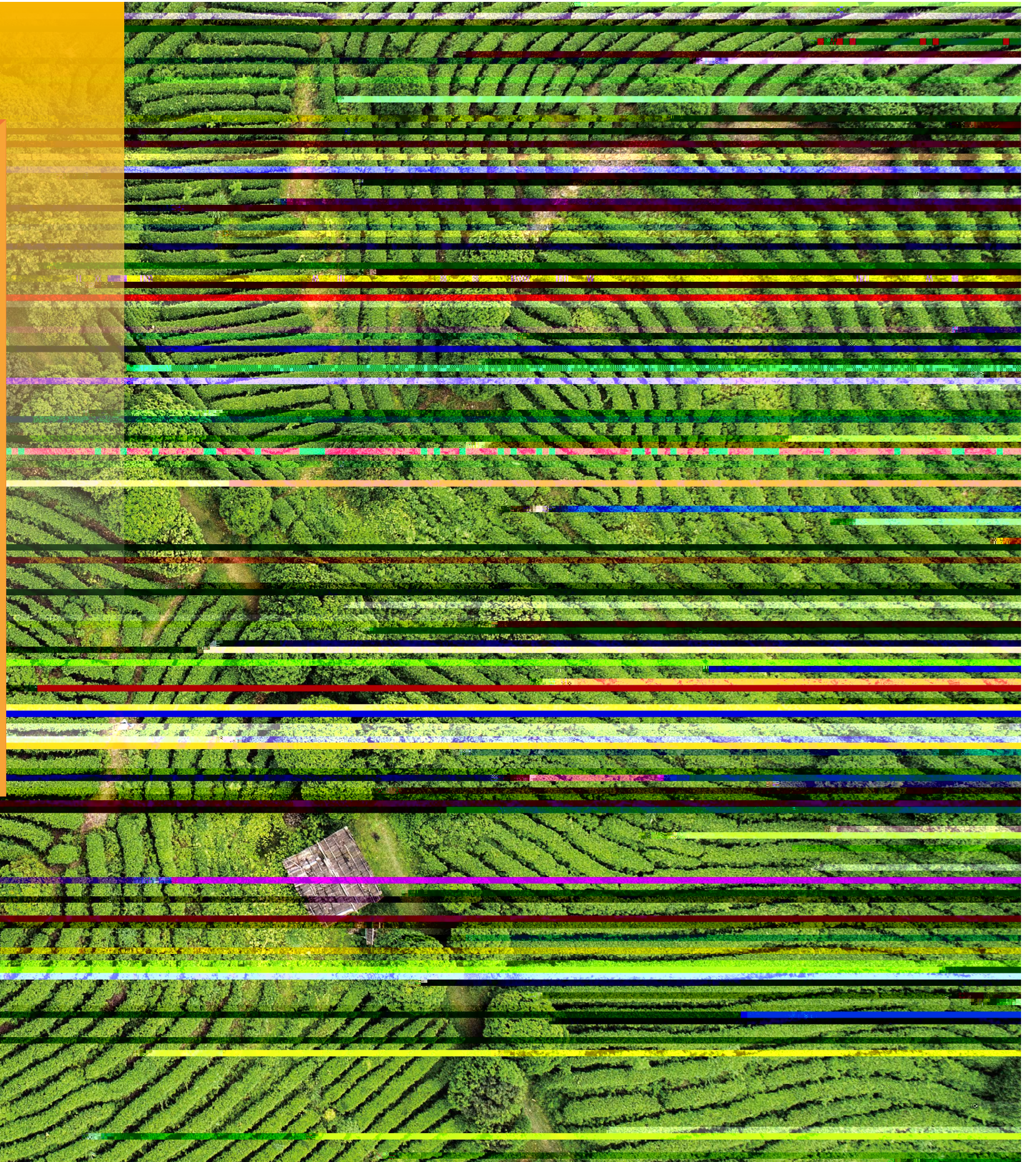


Industry Recognition
About this Report

Industry Recognition



MAP Sinochem Agriculture was included in the "APEC 2021 50 Industry Best Practices of China Digital Economy"



About this Report

Reporting Period

Source of Data

Corn:

Wheat:

Rice:

Grapes:

Apple:

Citrus:

Strawberry:

Cherry

Tomato:

Potato:

Alfalfa:

Number Valid Questionnaires

	Valid questionnaires	MAP Farmers	farmers
Corn	122		
Rice			
Grape			
Apple			
Citrus			
Strawberry			
Cherry Tomato			11
Potato		21	
Alfalfa			
	818	422	396

References

[1] The Price Department of National Development and Reform Commission,

[2] China Agricultural Green Development Research Center, Chinese Academy of Agricultural Sciences,

Environmental Effects Evaluation of the Apple Production

Methodology

Weight Determination

The weights of the MAP Agricultural Green Development Index

determine the weights independently, and the weights for the

Members of the Expert Team



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Chinese Version



English Version