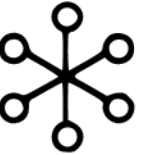




THE WORLD BANK



Sherpa Space

AgTech: A 20-Year Outlook

Sherpa Space

Choa Mun, Yun, Ph.D., President

Humanity's Major Challenge by 2050

Food Shortage

Food Production
Required
In the Next
40 Years

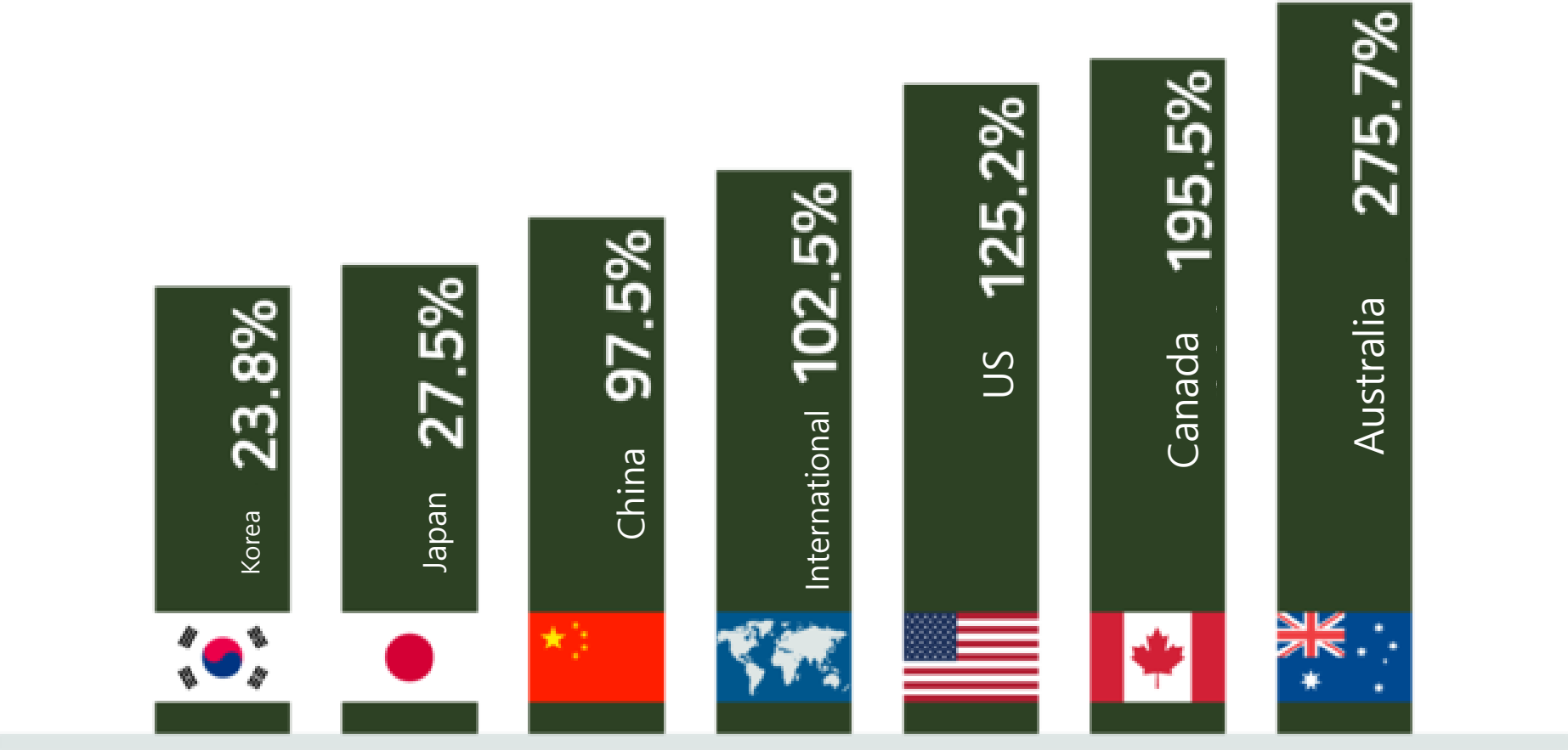
=

Cumulative
Food Production
In the Last
80 Years

WFP's Secretary General:

"Food security is of the utmost priority"

Global Food Self-Sufficiency Rates



| 2013–2015 Average Food Self-Sufficiency |

Smart Farms: The Proposed Future of Agriculture



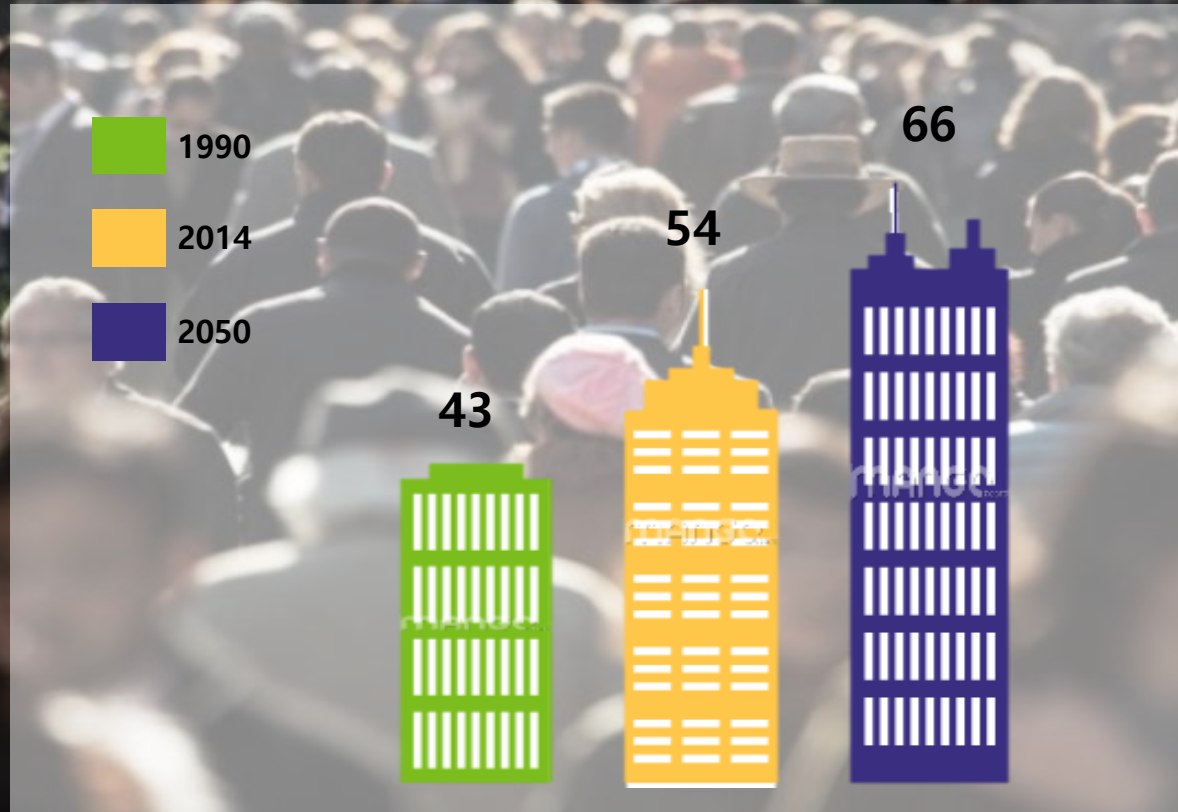
President Moon demonstrates a trial run of a Smart Farm Management System
at the 2018 Korean Innovative Growth Competition

Smart Farms

\$ 29 B
2017

Urbanization Trends: International

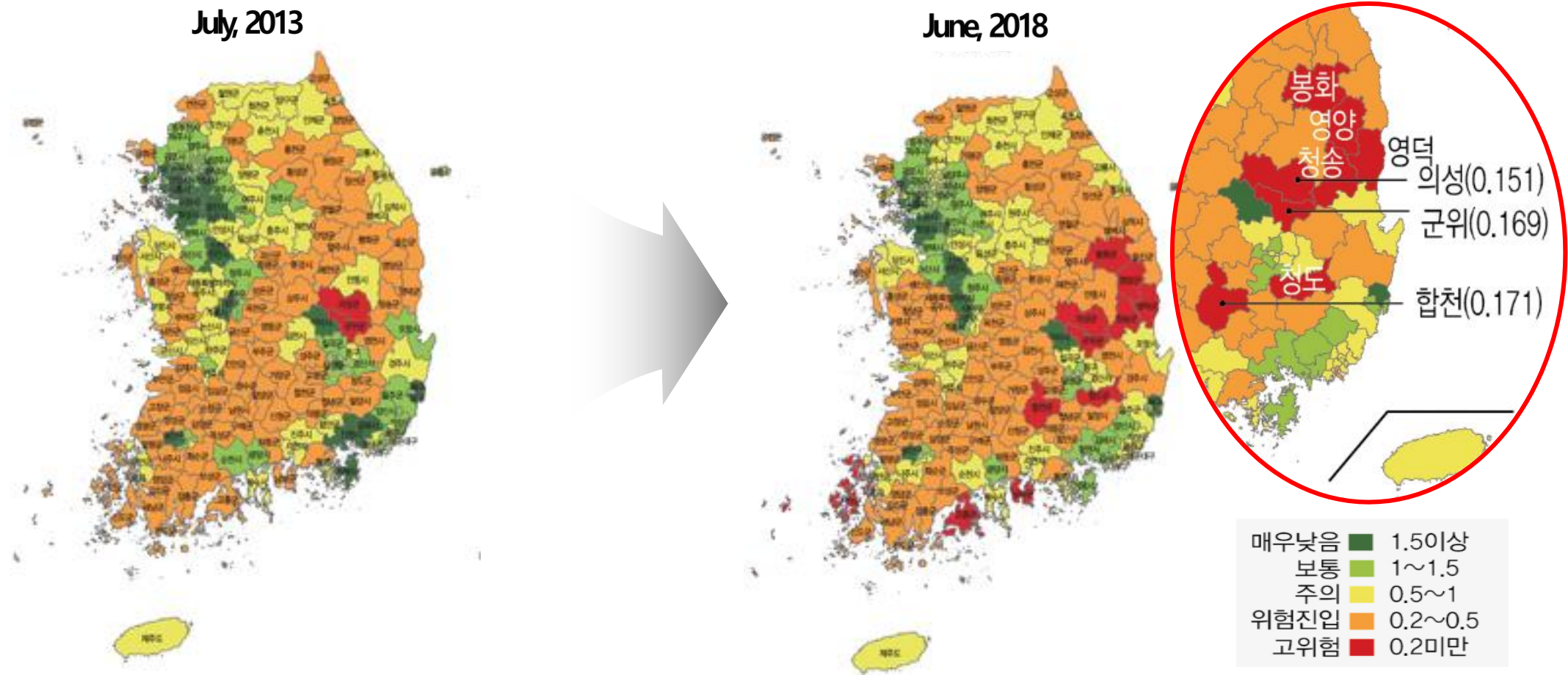
66% of the Global Population
Expected to Reside in Cities by 2050



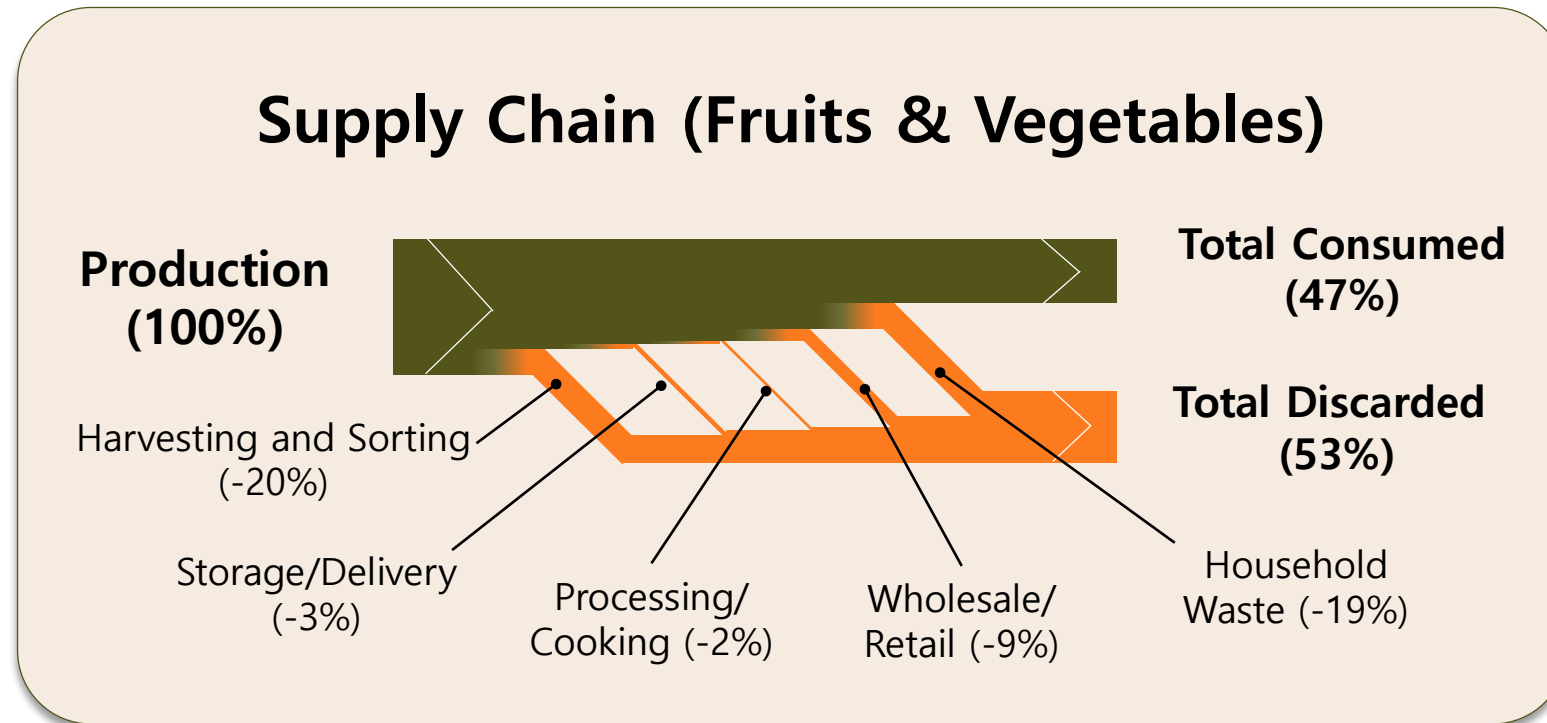
United Nations (2016)

Urbanization Trends: South Korea

Nationwide (228 Regional Districts) Risk of Underpopulation



Agricultural Products' Challenges in Supply Efficiency



53% of Fruits & Vegetables are
Wastefully Discarded During Distribution

Agricultural Products' Challenges in Safety

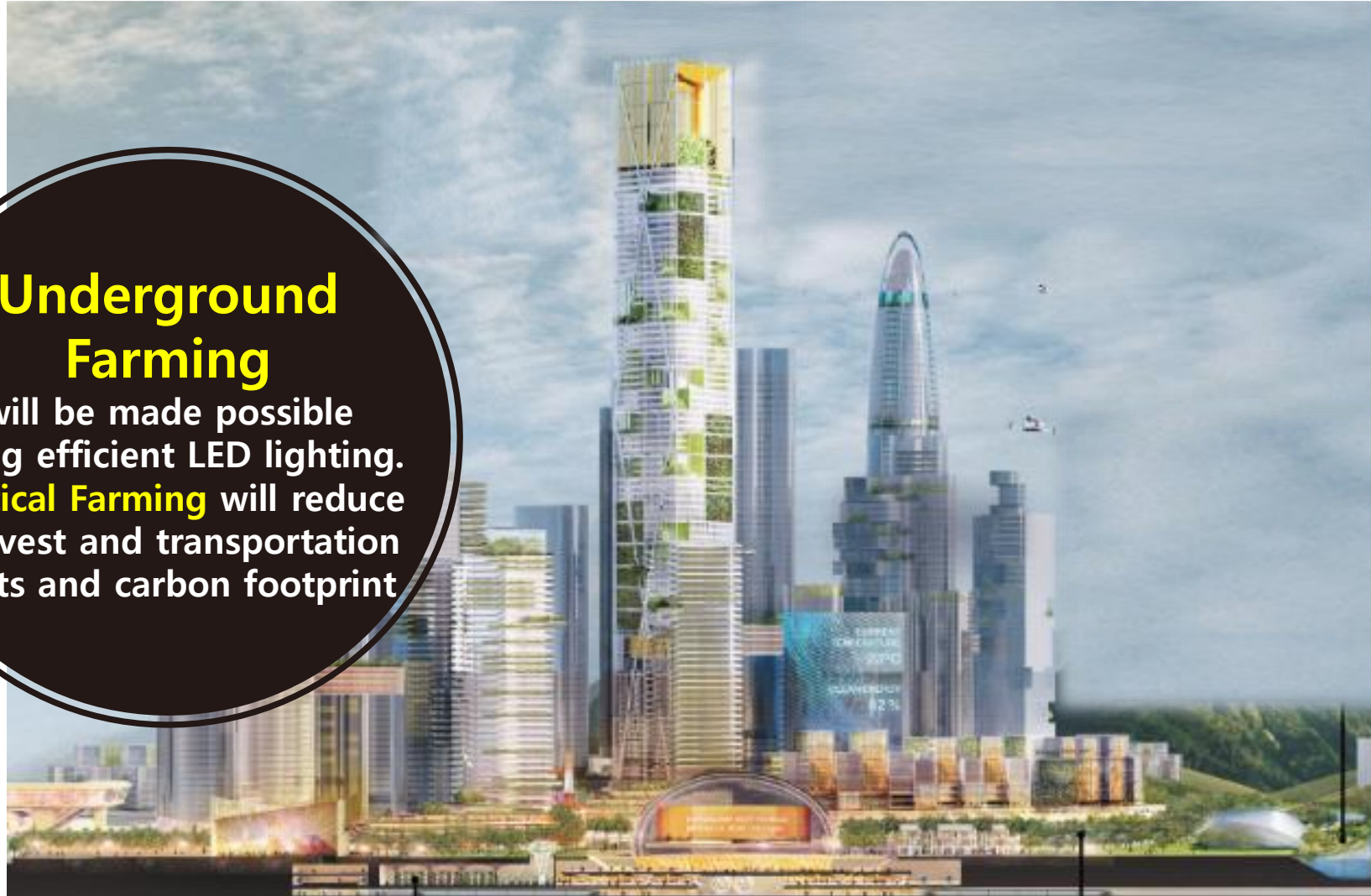


Amount of **Agricultural Pesticides & Waxes**
Positively correlate with the distance traveled

Cities of the Future: Food

Underground Farming

will be made possible
using efficient LED lighting.
Vertical Farming will reduce
Harvest and transportation
costs and carbon footprint



Cities of the Future: Food





K-STARTUP



Sherpa Space



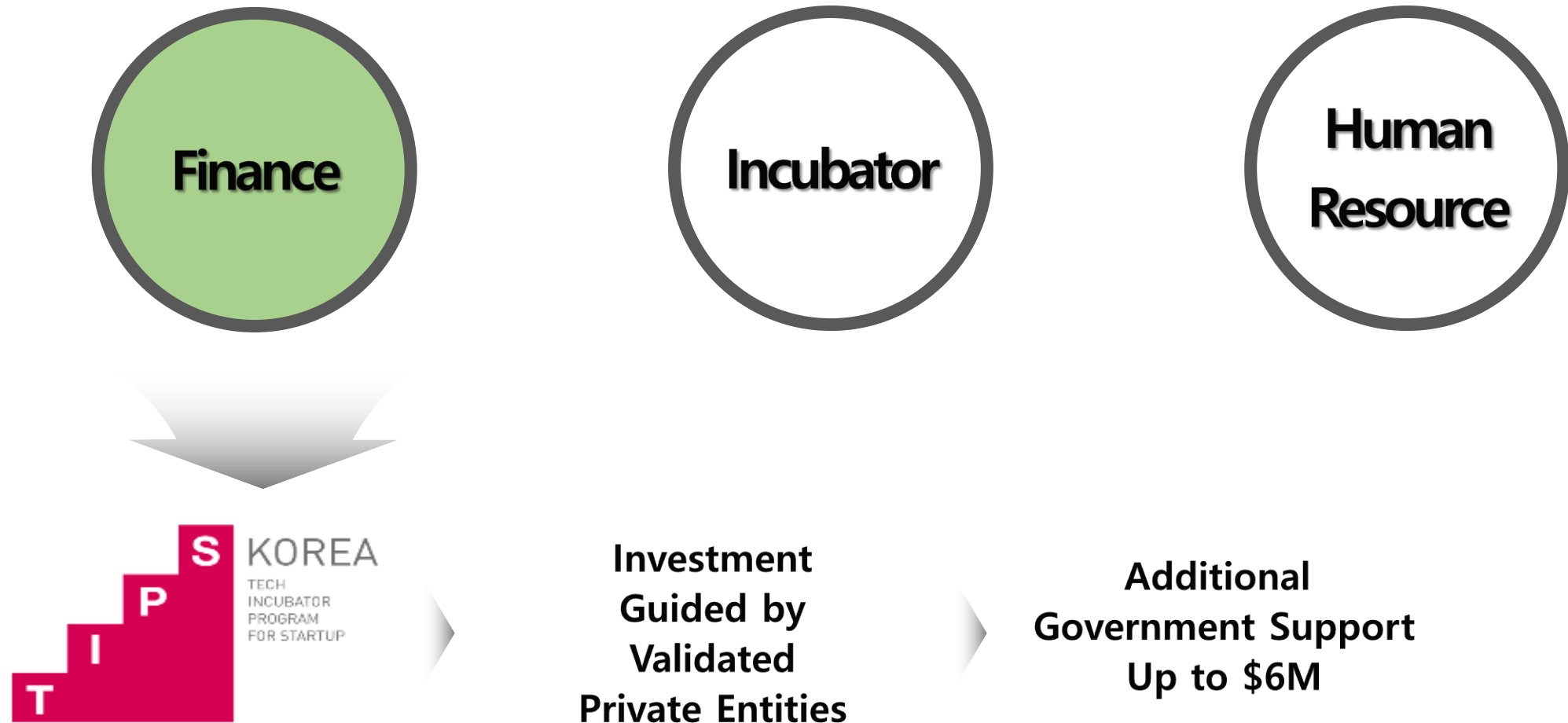




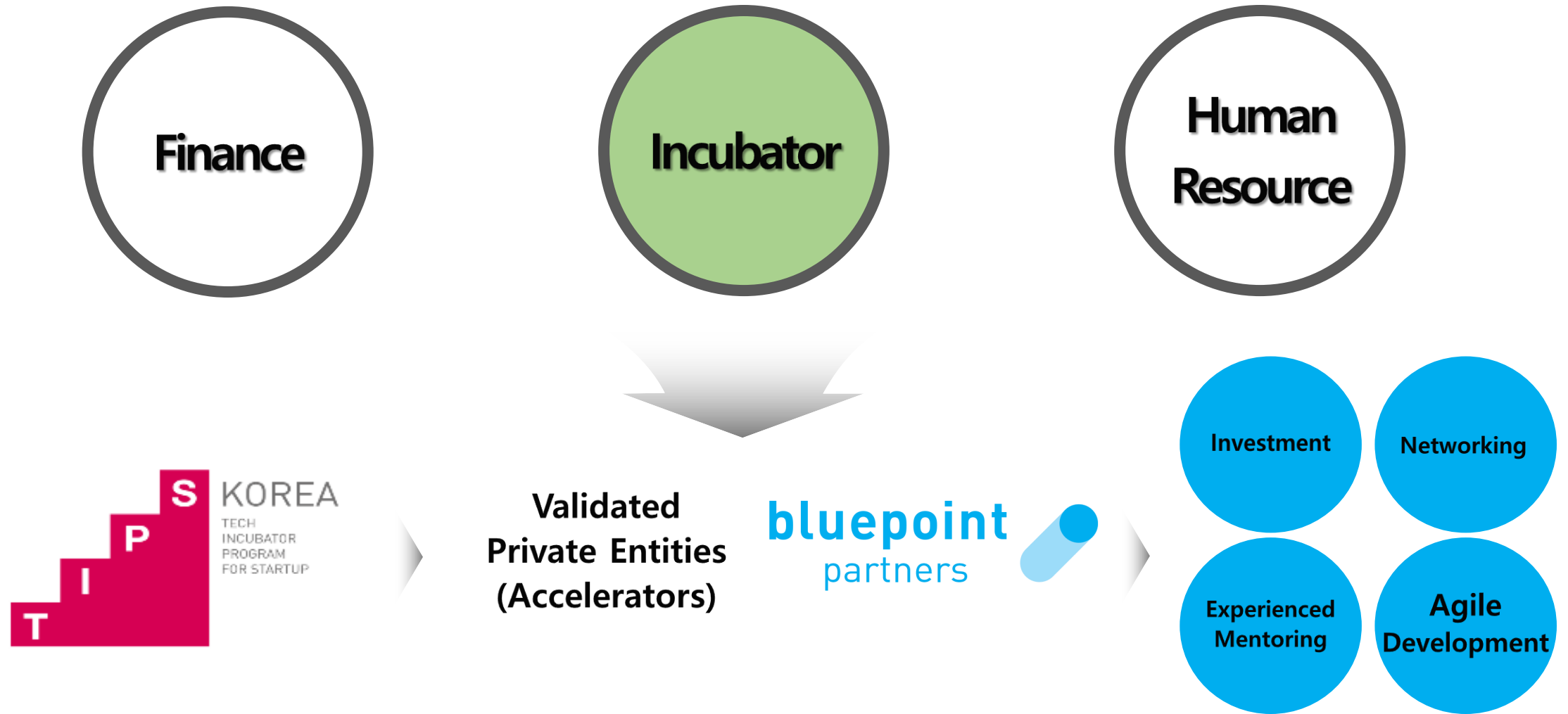
3 Key Components of a Startup



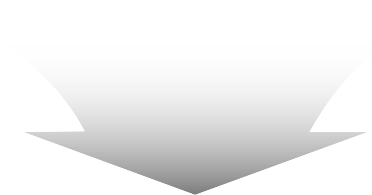
3 Key Components of a Startup



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3 Key Components of a Startup

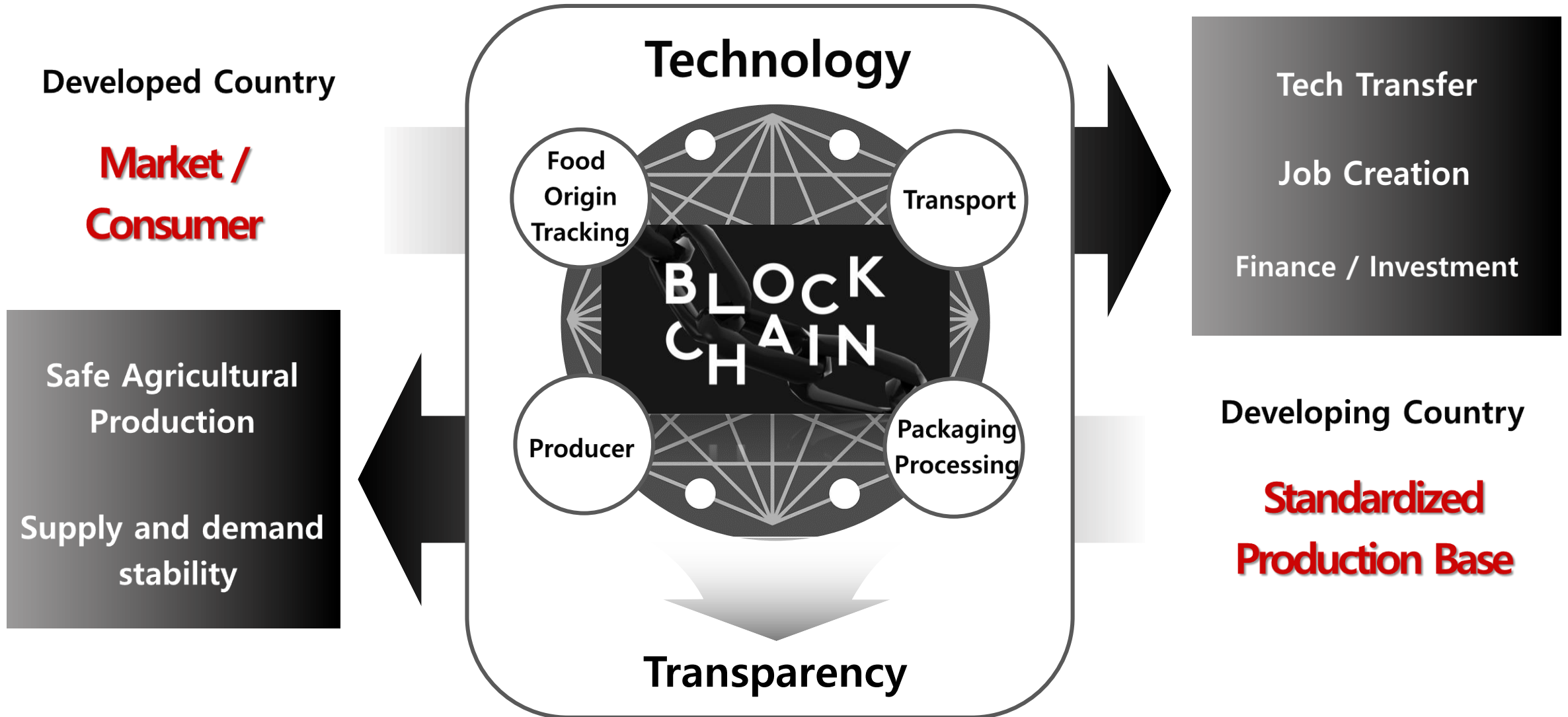


대한민국정부

Government Assistance for the Recruitment of Youth



Agricultural Strategies of Developing Countries



Platform Business of JAVARA (Indonesia)



Discover

Indonesia's Local Specialties



Job Creation

Tech Transfer

Income improvement

Platform

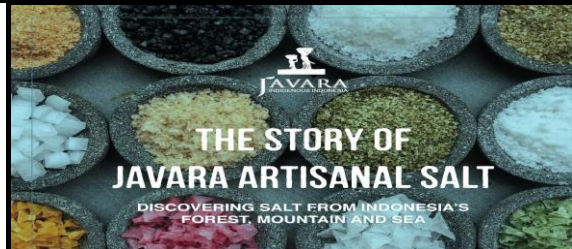
Farmer Education



Establish Quality Assurance Systems



Premium Branding



Distribution channel



Safe and Variety of Agricultural Produce

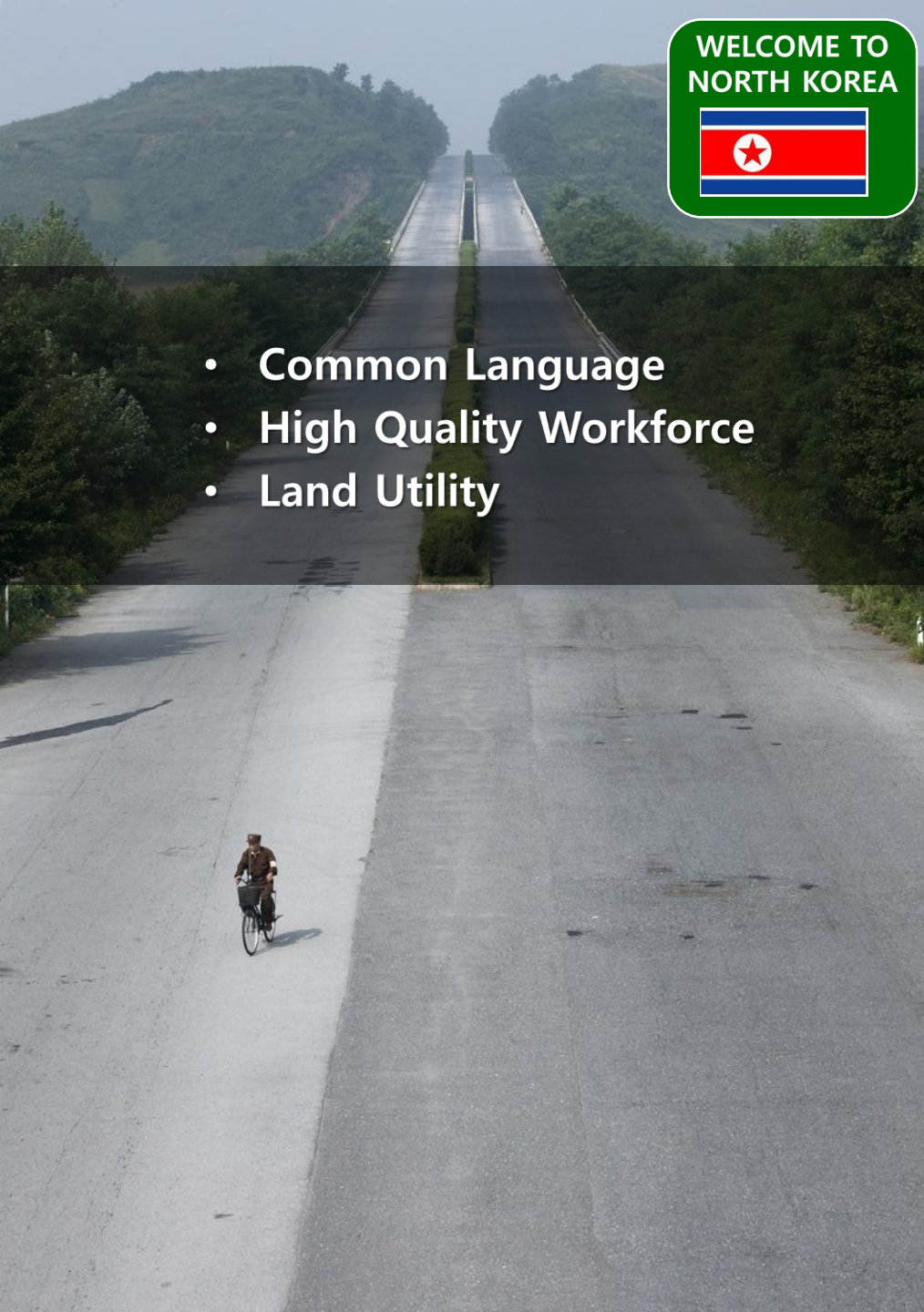
Export



Platform Business of JAVARA (Indonesia)



Bali Artisan Pyramid Salt



- Common Language
- High Quality Workforce
- Land Utility

Economic Collaboration with North Korea Through Agriculture



Source : <http://www.injournal.net/78619>

High-Value Crop
Production Tech Transfer



Improved
Price
&
Quality

Improved
Global
Competence

Core Tech Required for Urban Farming



Lighting

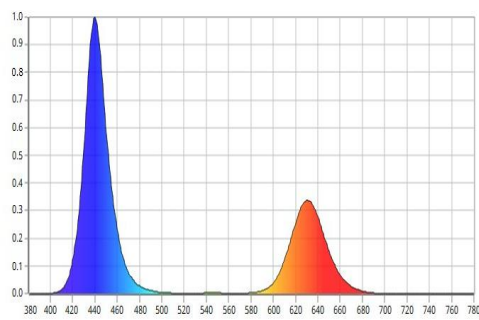
CO₂ Supply

Cooling

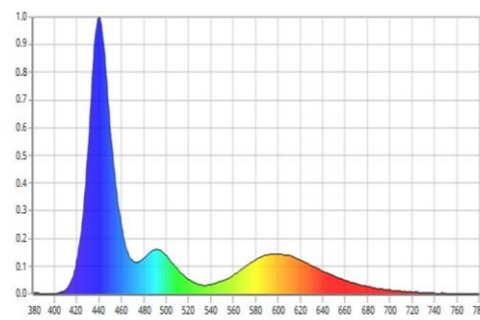
Heating

Nutrient

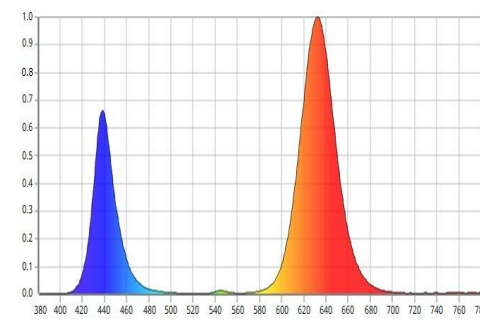
Energy-Efficient Light Wavelength Conversion Using Tunable Film



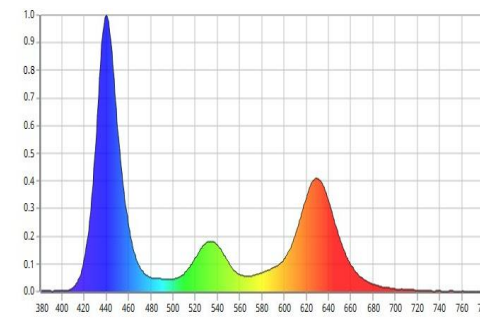
<Light Mode 1>



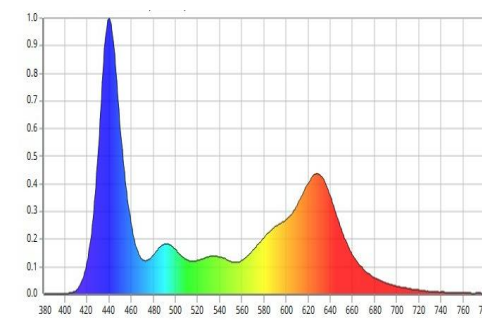
<Light Mode 2>



<Light Mode 3>



<Light Mode 4>



<Light Mode 5>

Tunable Full-Spectrum Lights





Sherpa Space

Then,

How do we know

Plants need what

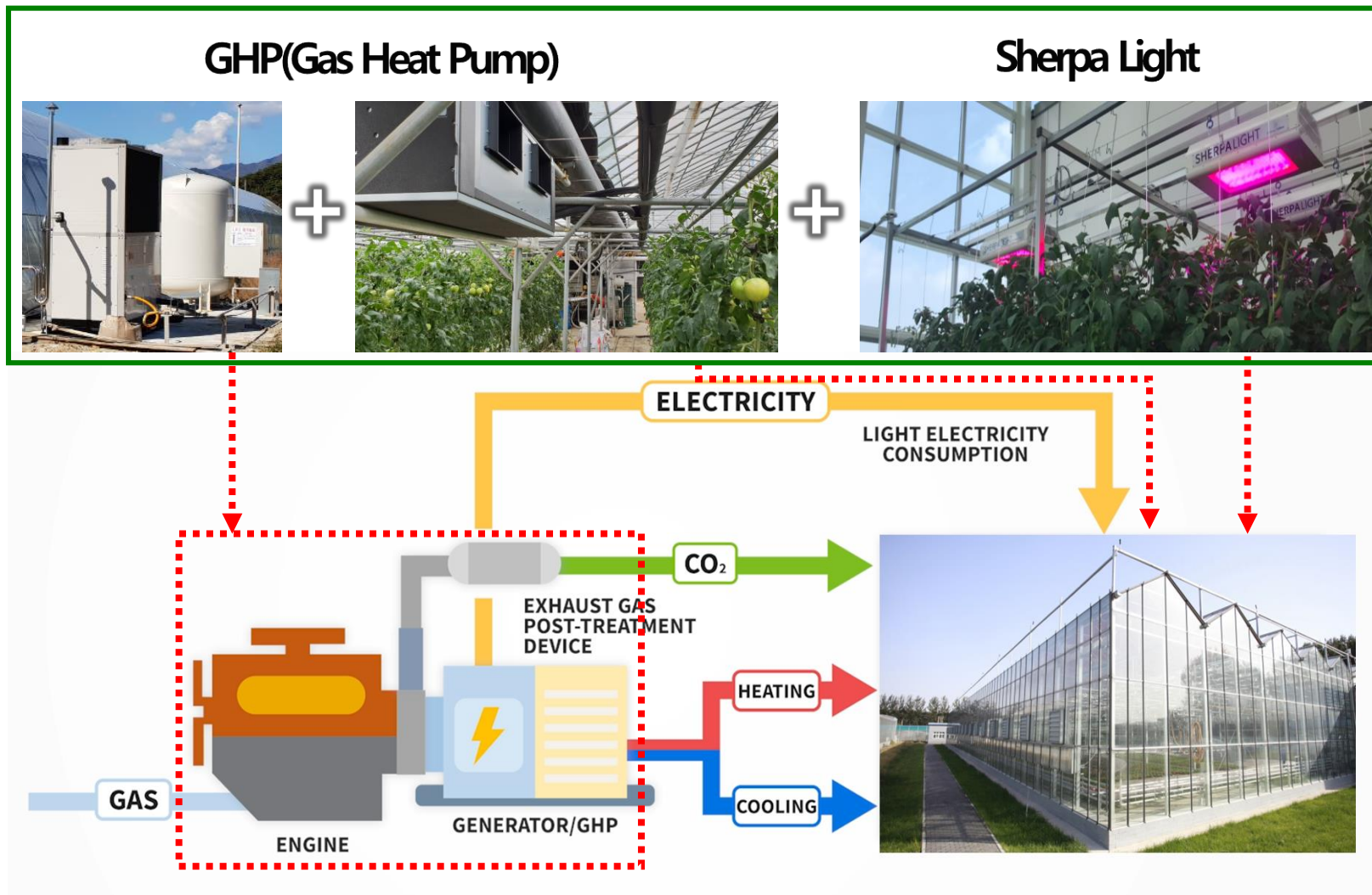
Wavelength &

Intensity?





GHP Technology for Greenhouse



Using GHP Technology, Turning natural gas into CO₂, Air conditioning, and Electricity



KOREA Strawberry Medicinal Plants

**Productivity
Quality**

The Team



Sherpa Space KAIST

SHERPA  FARM

PESTICIDE FREE . NO GMO . ORGANIC . FRESH . LOCAL

Better Light, Better Life

**Improve quality of life through
maximizing agricultural value**



Choa Mun Yun, CEO

cmunyun@sherpaspace.co.kr