

Bioethanol production in sugarcane Without competition with foods



Sugarcane Project Leader TERAUCHI Takayoshi

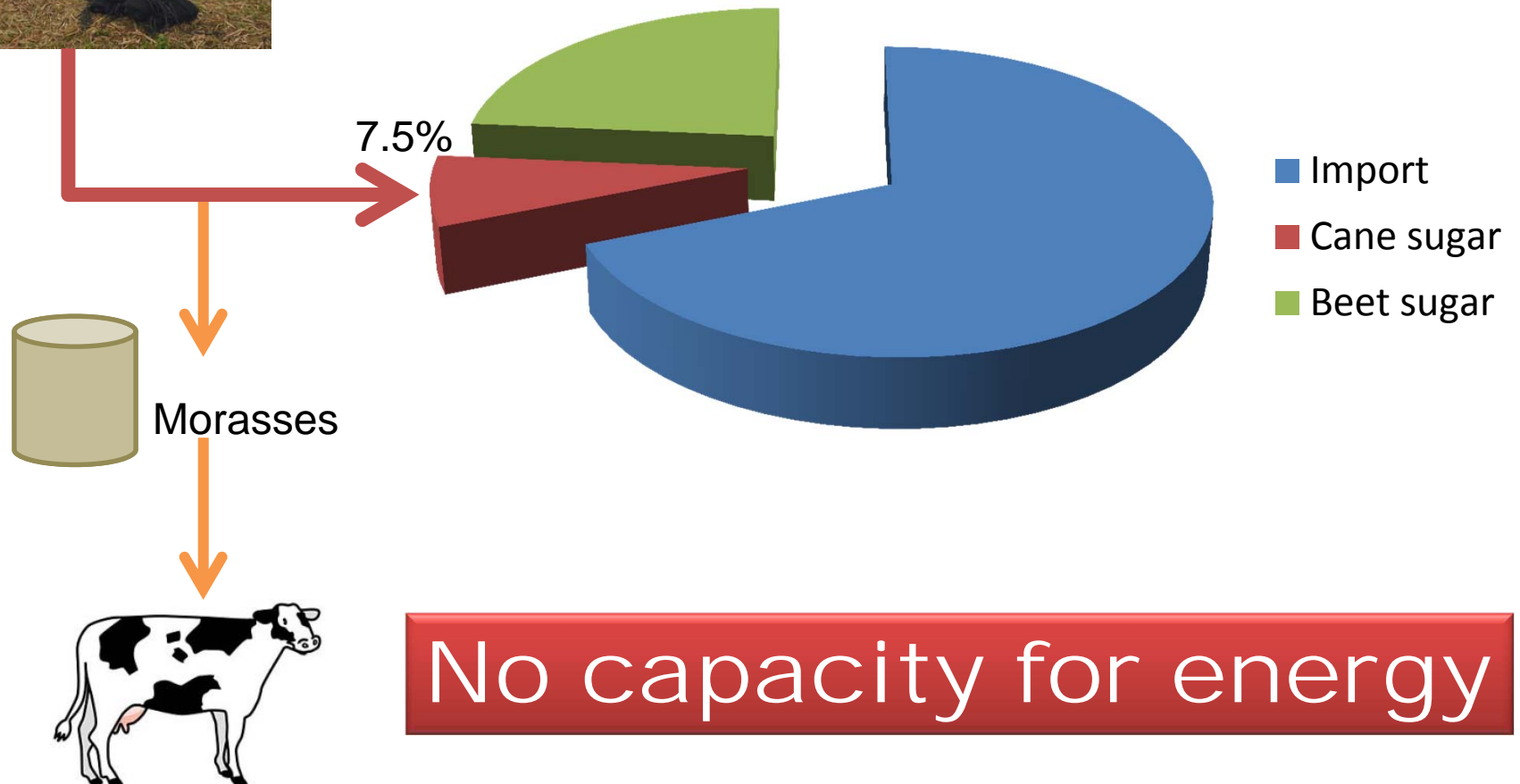
National Agricultural Research Center for Kyushu Okinawa Region

Sugar is one of important foods



However...

Sugar supply in Japan

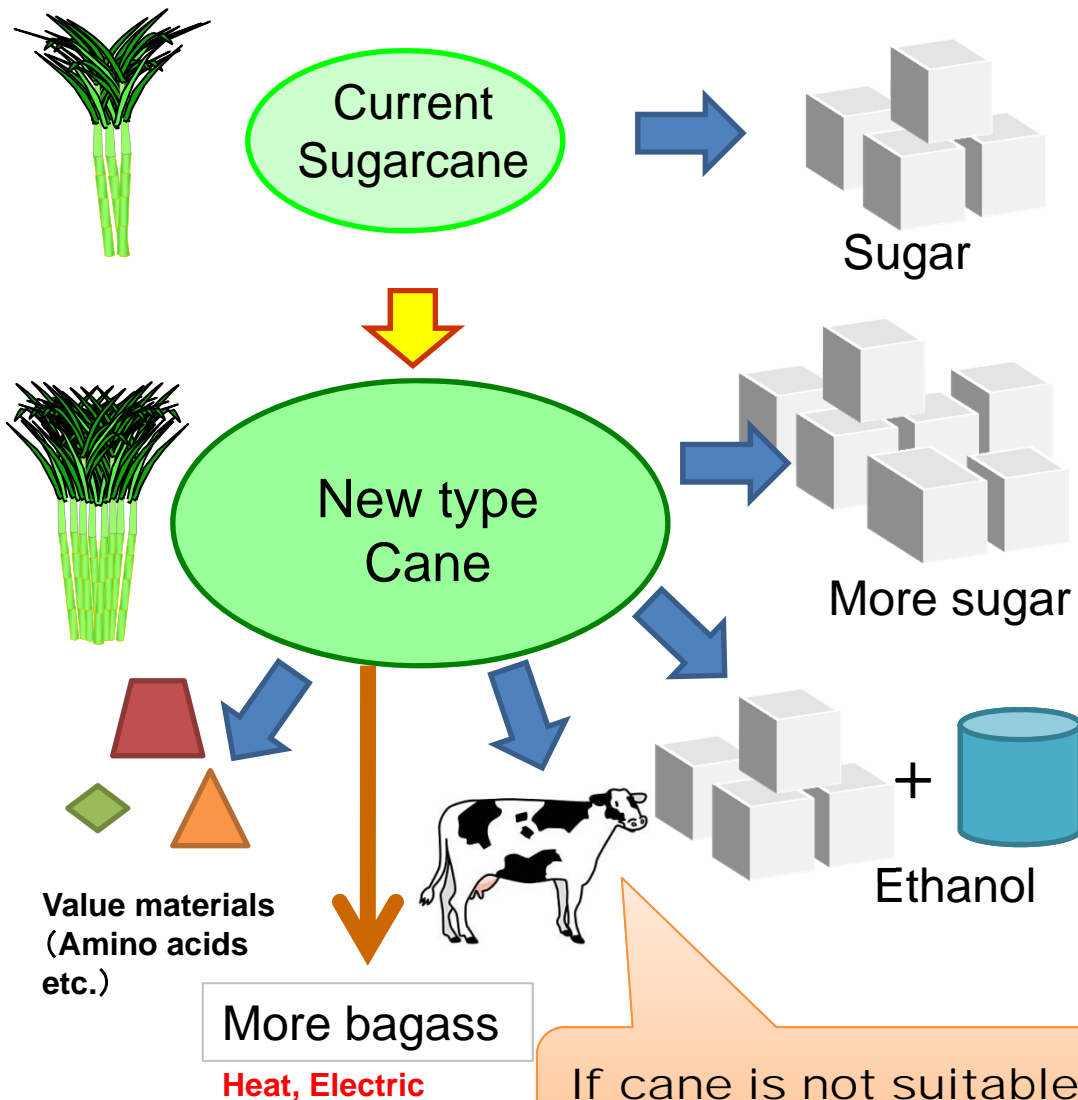


Cane use for multi purpose



NARO

National Agriculture and Food Research Organization



No capacity for energy

Ideal, but...
High yielding variety is
low quality

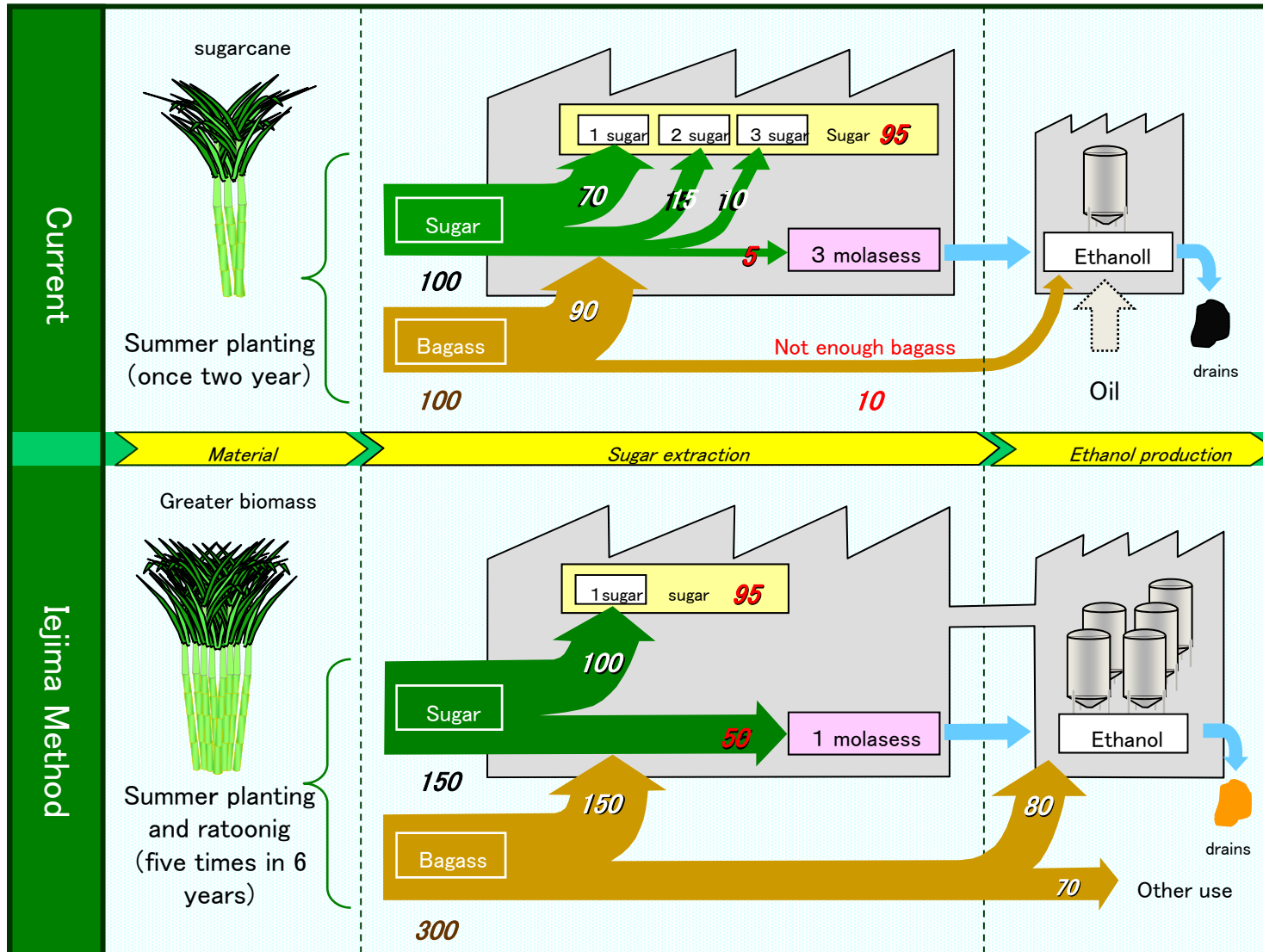
Sugar and ethanol combined
production process

If cane is not suitable
for sugar production

Higher yield with
greater biomass
is anyway important

The combined process "Iejima Method"

New process for low quality canes



International patent of Asahi Group Holdings Co., Ltd and NARO/KARC

Step 1; Interspecific hybrid

High sugar
Low fiber
Low adaptability

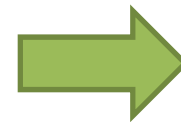
Commercial
canes

Low sugar
High fiber
High adaptability

Wild canes ♂



F1 hybrids



Great biomass
Low sugar
High fiber
Perennial ratoonig

Cane
for
feed



Step 2; Back cross

High sugar
Low fiber
Low adaptability

Commercial
canes

Low sugar
High fiber
High adaptability

Wild canes ♂

F1 hybrids

Cane for feed

BC1 canes

Greater biomass
Increased sugar
Rather higher fiber
Higher ratooning ability

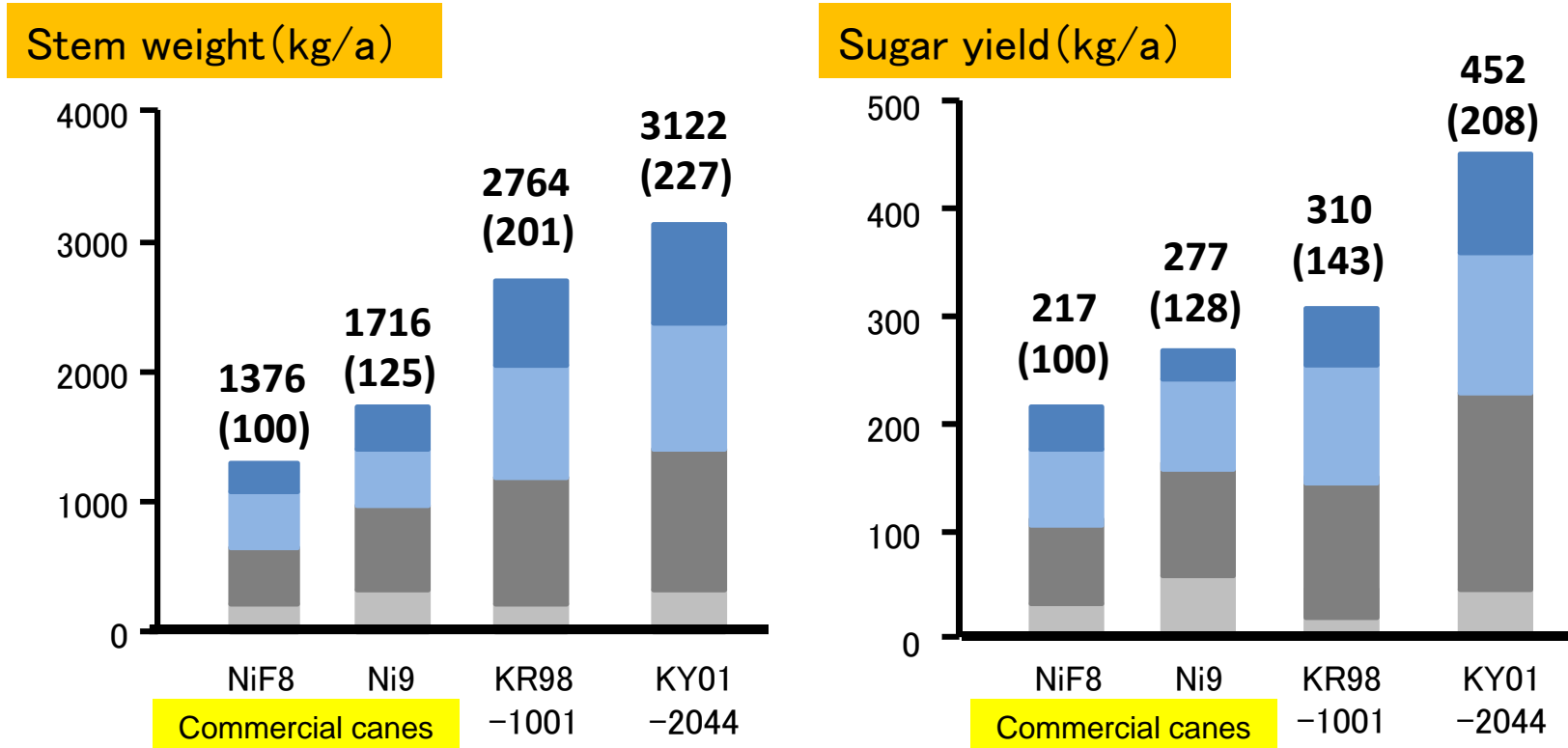


Ratoon crop in Tanegashima

Cane for combined process

Yield of Cane for combined process 'KY01-2044'

Spring Crop
 First ratoon
 Second ratoon
 Thierd ratoon



1.5 to 2 times more total amount of sugars
 More ratooning is available (Multi-ratooning)

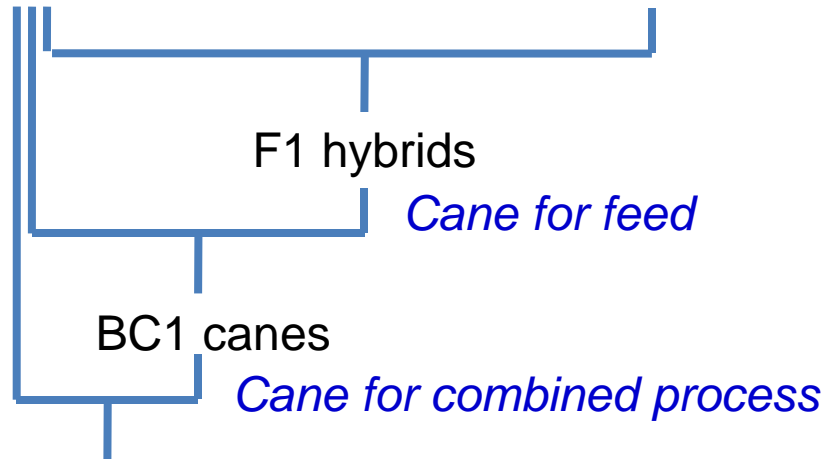
Step 3; Creating new type cane

High sugar
Low fiber
Low adaptability

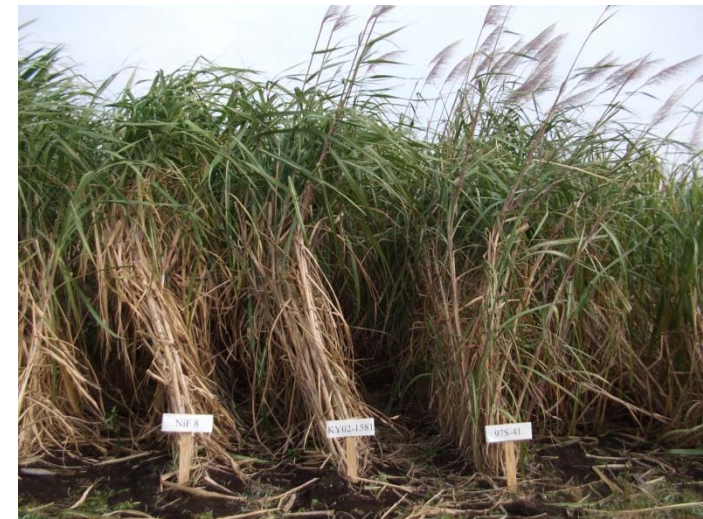
Commercial
canes

Low sugar
High fiber
High adaptability

Wild canes ♂



expected



New generations

New type cane
+
New process

Start with crop productivity

Yield increase



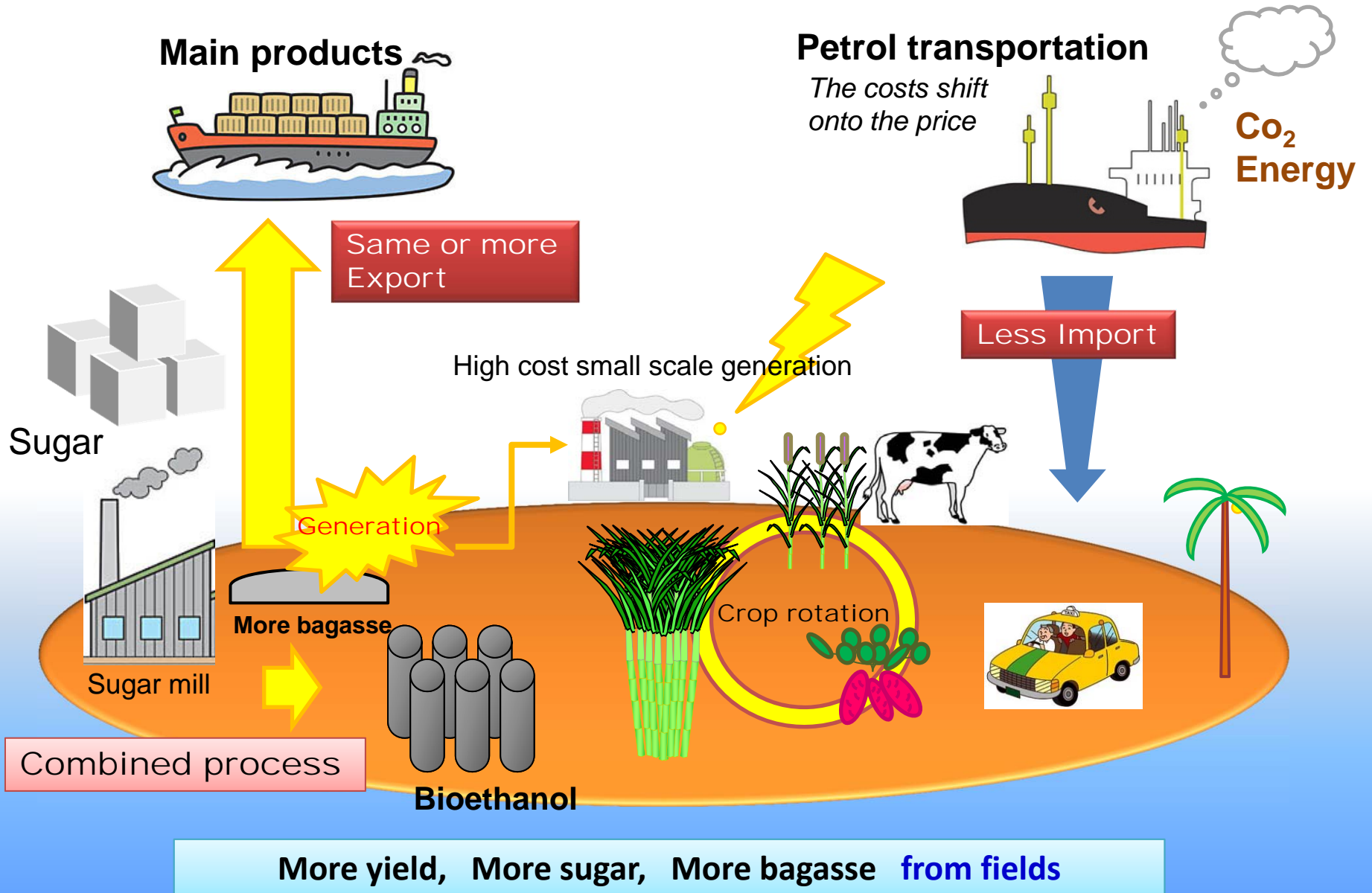
Partitioning



Large scale experiment

By Asahi Group Holdings Co., Ltd
Supported by Ministry of Agriculture Forestry and Fisheries

A little sustainable island



Thank you

Food and Agriculture for the Future