

IDEAS THAT SHAPE OUR COMMON FUTURE

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The Club of Rome

9th of November 2011

Wednesday 9 November 2011

IDEAS THAT SHAPE OUR COMMON FUTURE

based on *The Blue Economy*
A Report to the Club of Rome

Prof. Gunter PAULI

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2011

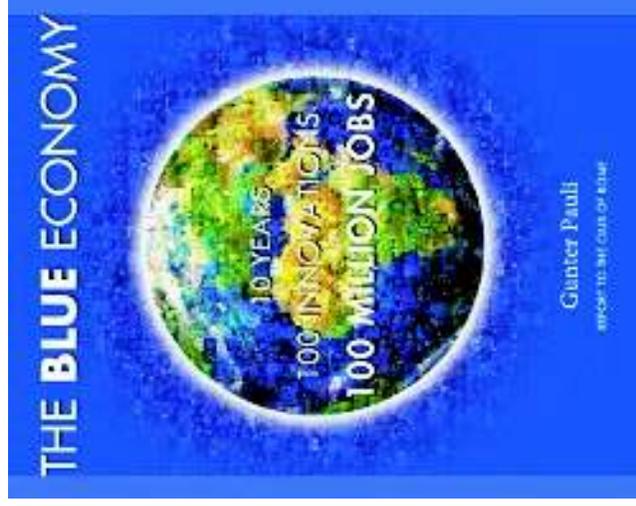
Spanish
French
Arabic (UNEP)
Russian (UNEP)
Chinese (PRC-UNEP))
Ukrainian
Vietnamese
English (Braille)
English (India)
English(South Africa)
Farsi

2010

English (USA)
Korean
Chinese (Taiwan)
Romanian
Hungarian
Italian

2012

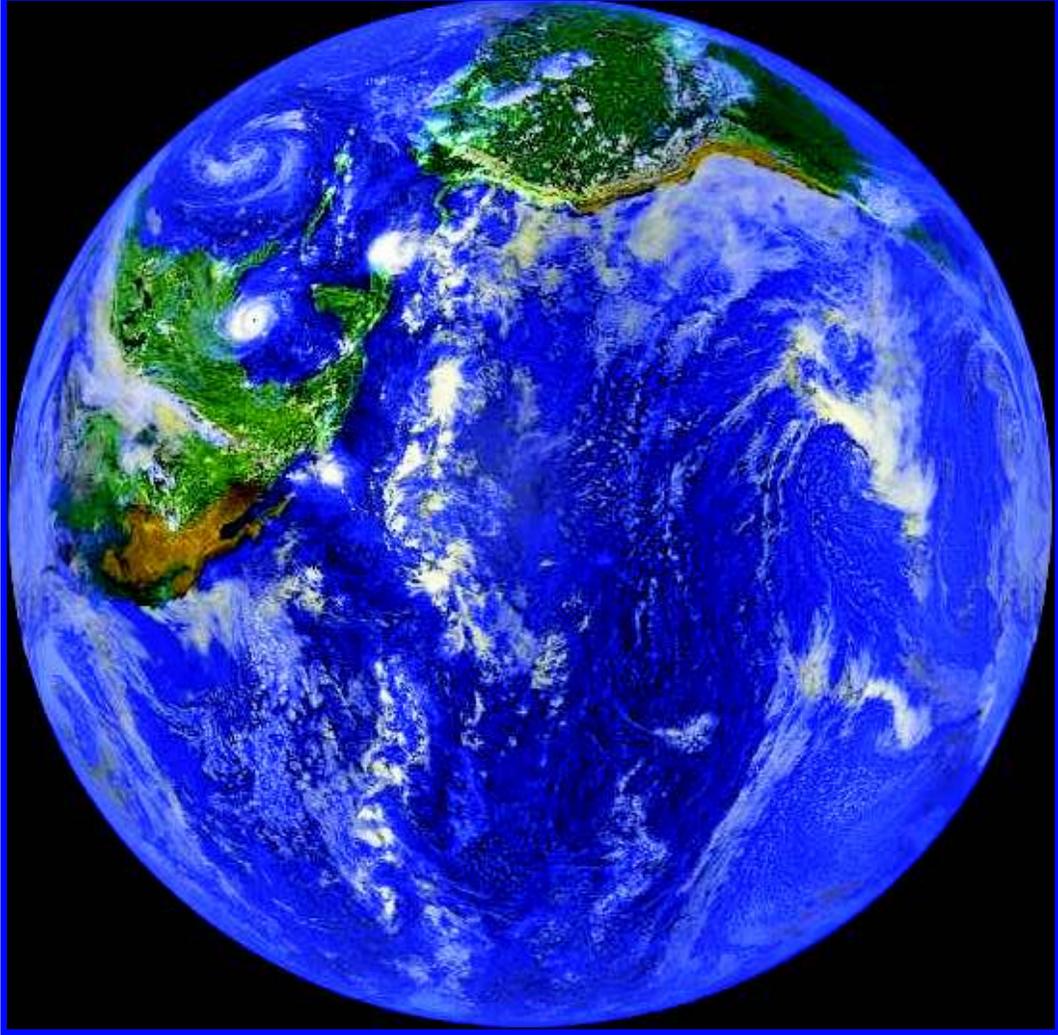
Dutch
Portuguese (Brazil)
Croatian
Serbian
Polish
German
English (Australia)
Albanian
Slovakian
Japanese



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Green Economy

Blue Economy

Green Economy

Expensive
Subsidized
Taxes

Blue Economy

Green Economy

Expensive
Subsidized
Taxes

Blue Economy

Innovative
Competitive
Jobs with ROI

Green Economy

Blue Economy

Green Economy

Protect
Comply
In favor or against

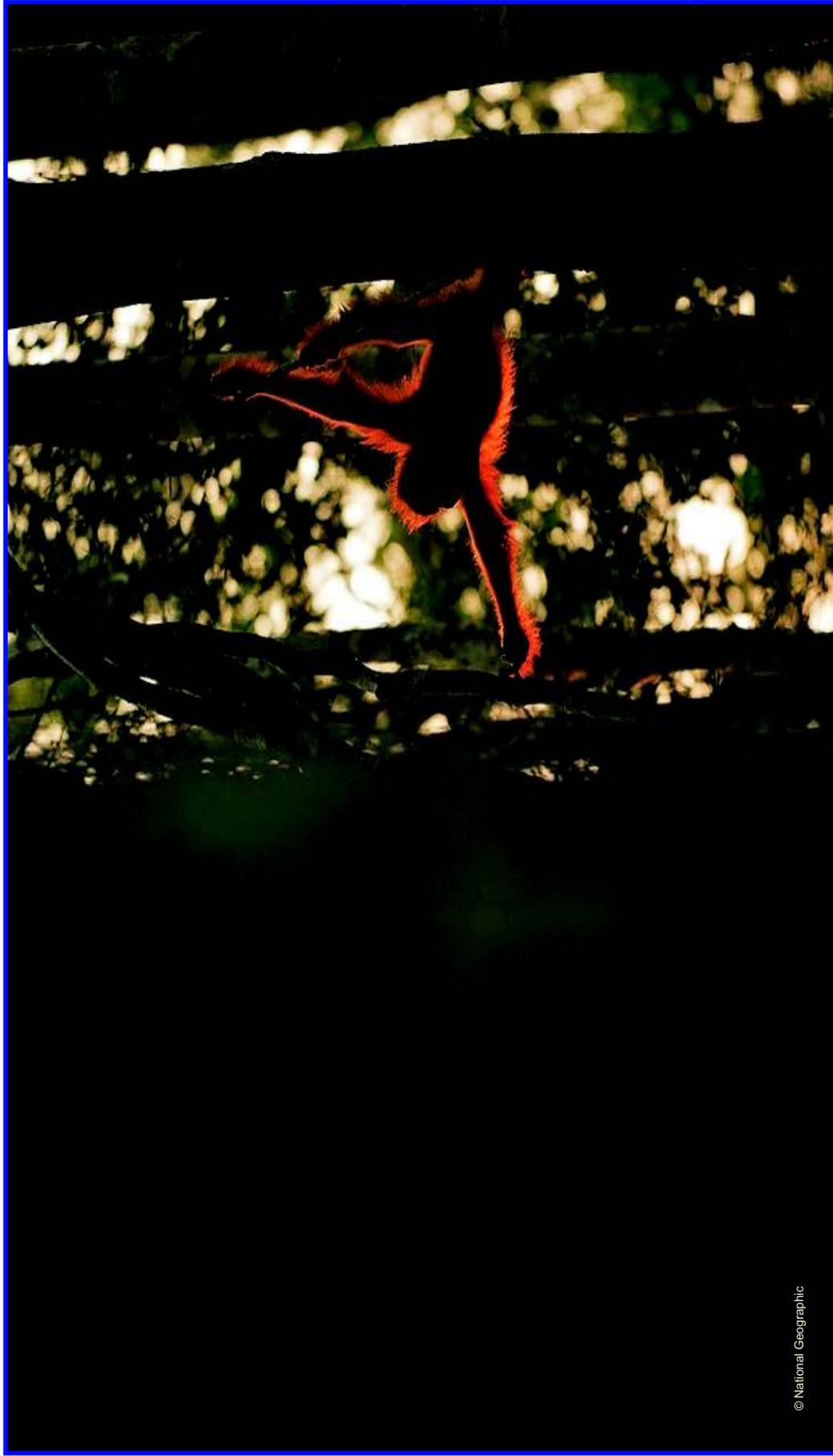
Blue Economy

Green Economy

Protect
Comply
In favor or against

Blue Economy

Regenerate
Entrepreneurs
Choose the best

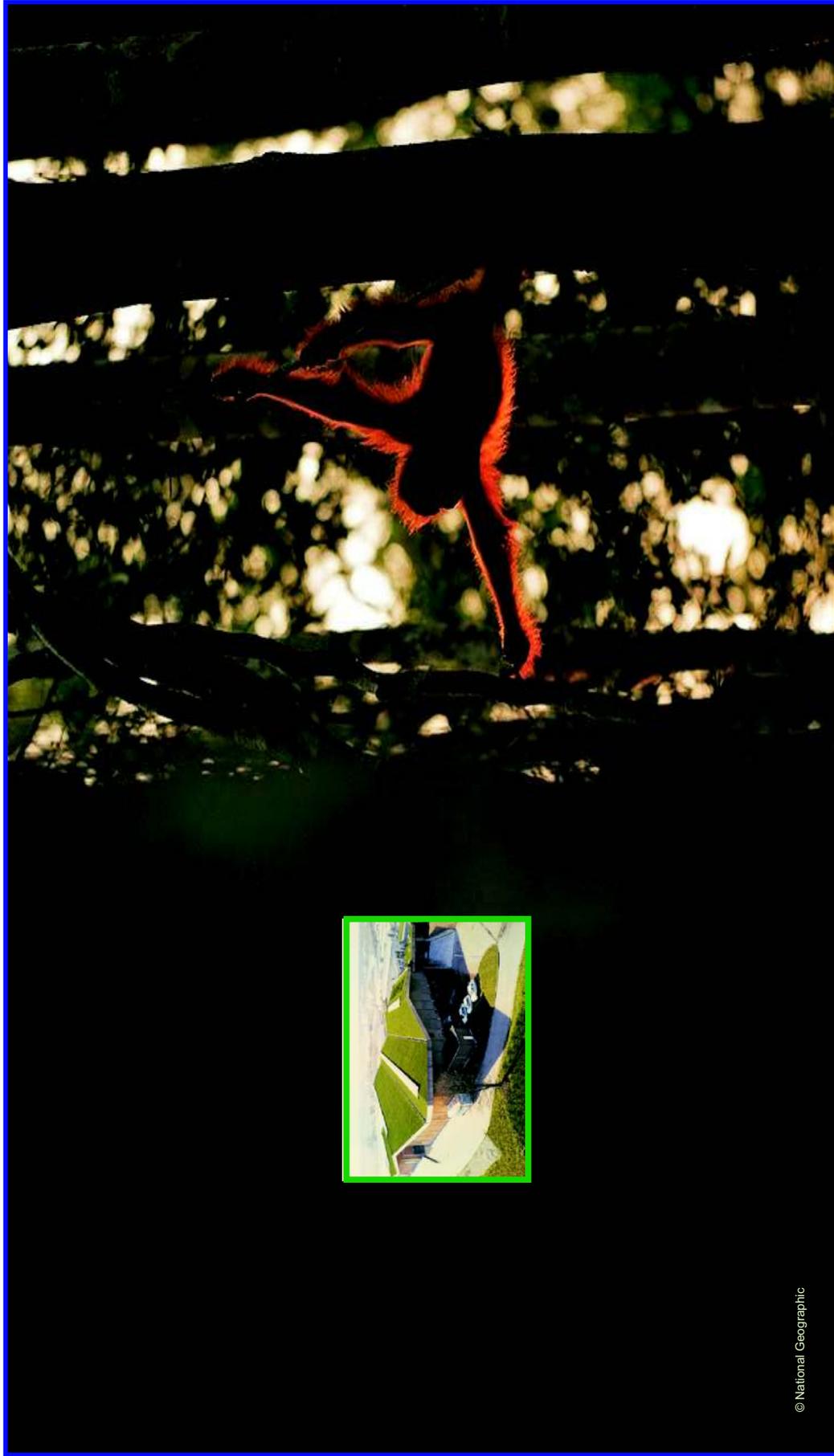


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biodegradable



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biodegradable



not sustainable



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biodegradable



not sustainable

unintended
consequences



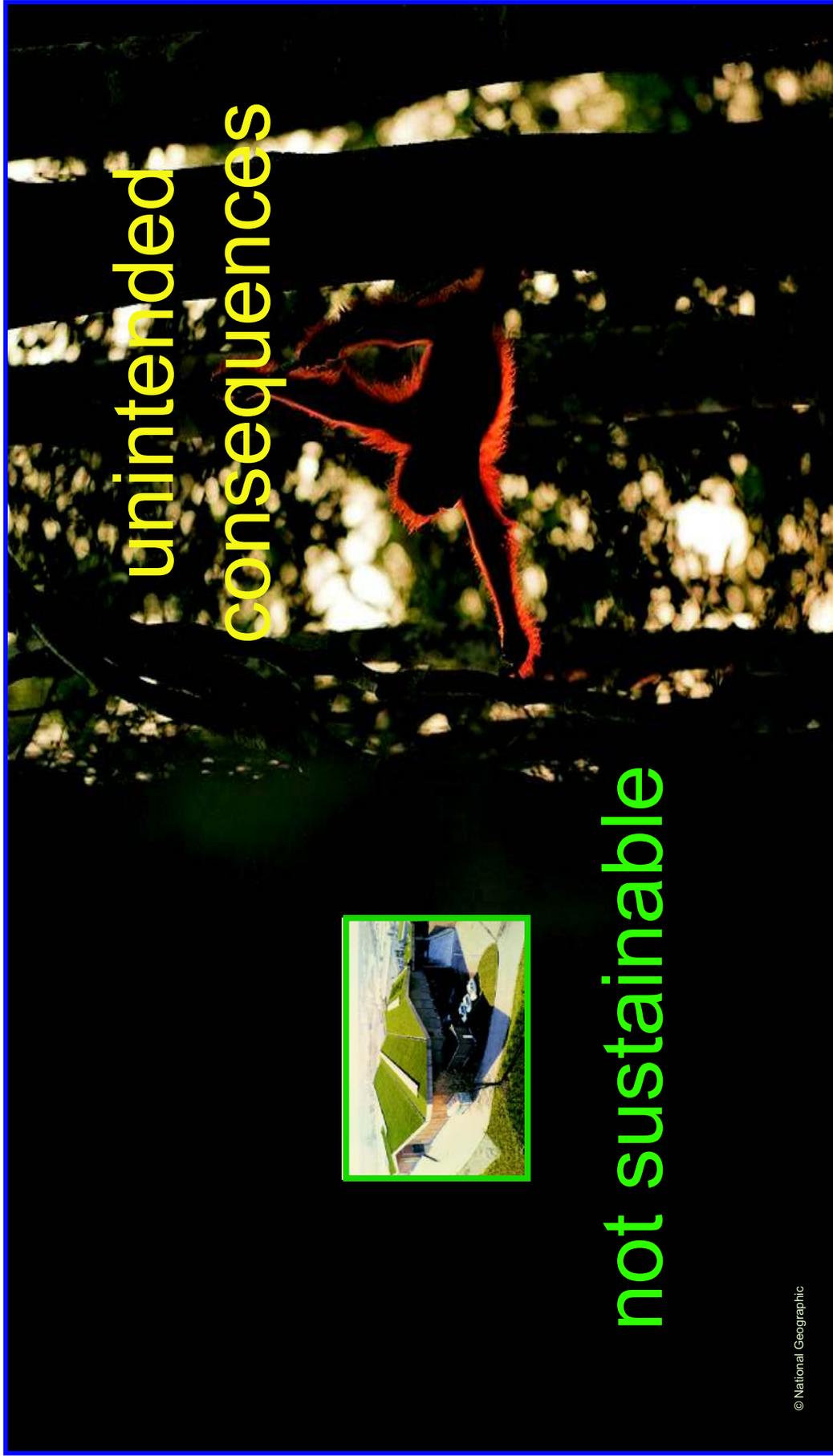
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unintended
consequences



not sustainable

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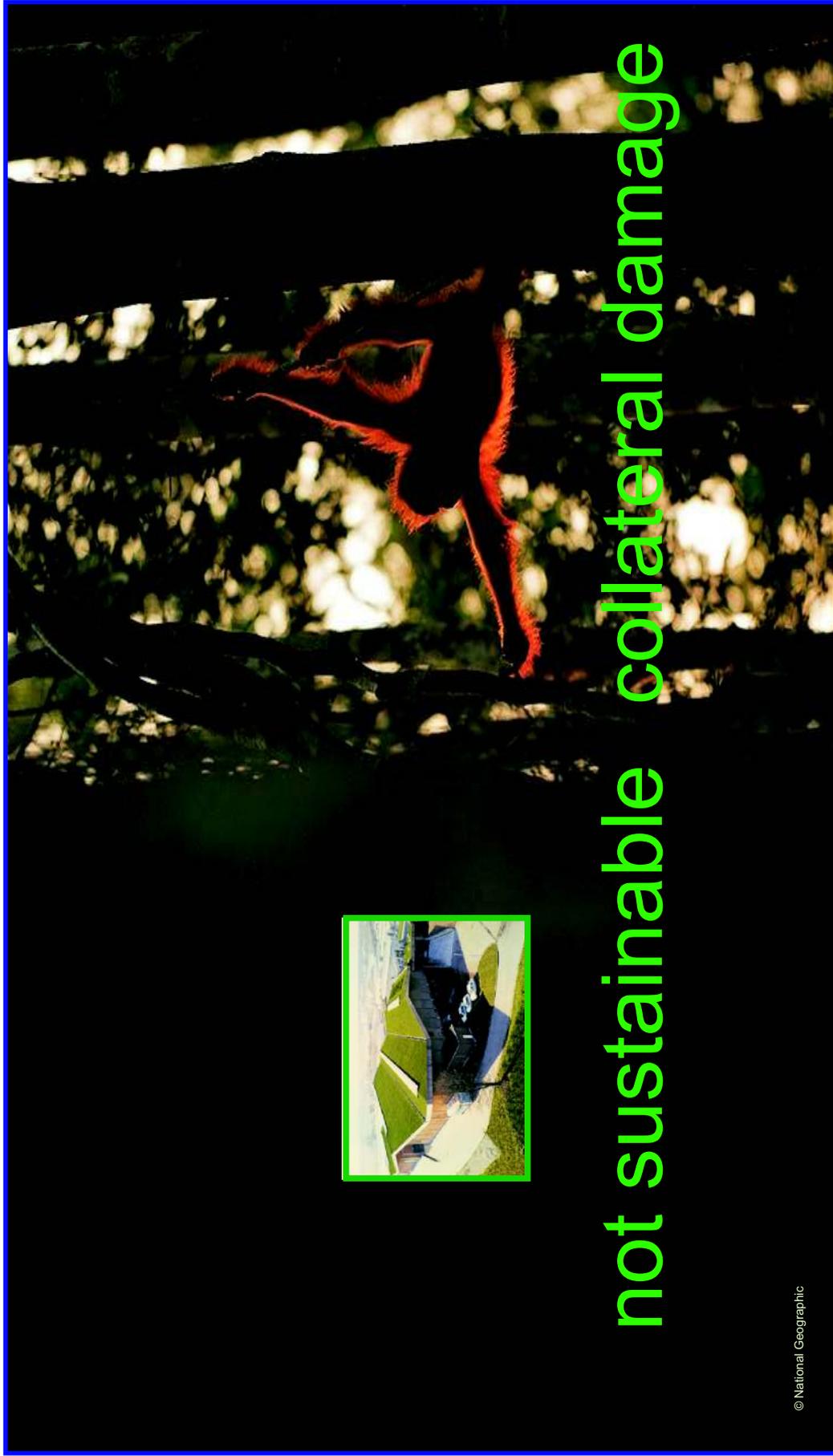
not sustainable

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not sustainable collateral damage

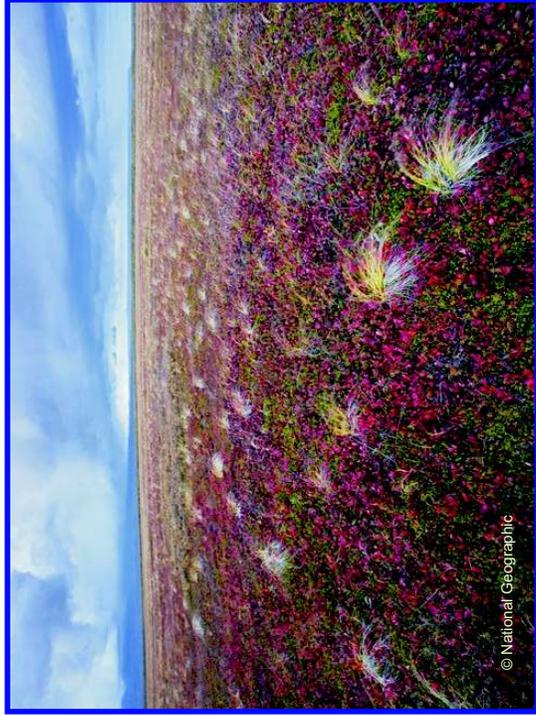
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Sustainability is
the capacity to respond to the basic needs of **all** ...



Sustainability is
the capacity to respond to the basic needs of **all** ...

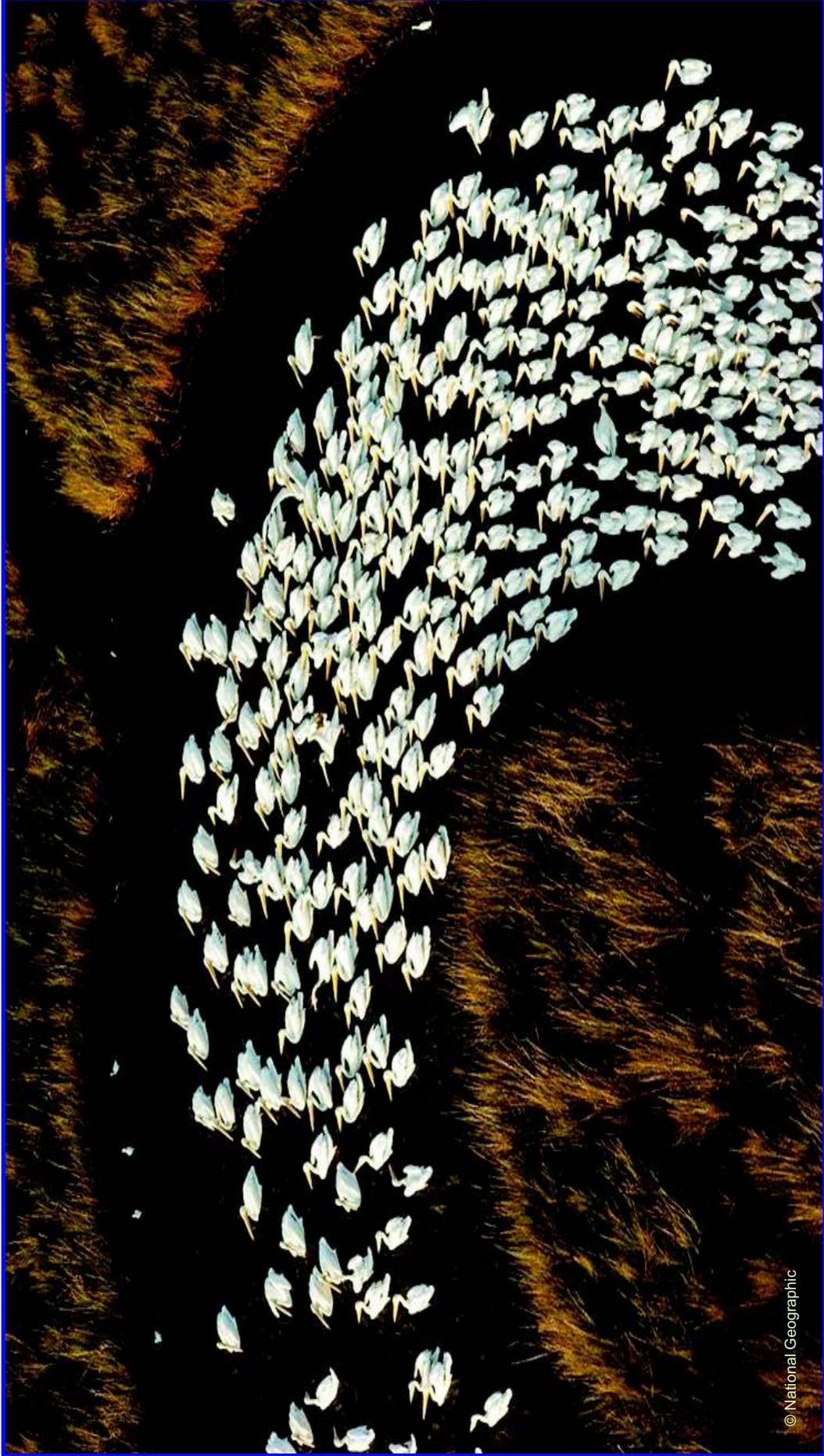


with what we have

Sustainability is
the capacity to respond to the basic needs of **all** ...



with what we have
(that is the way nature works)



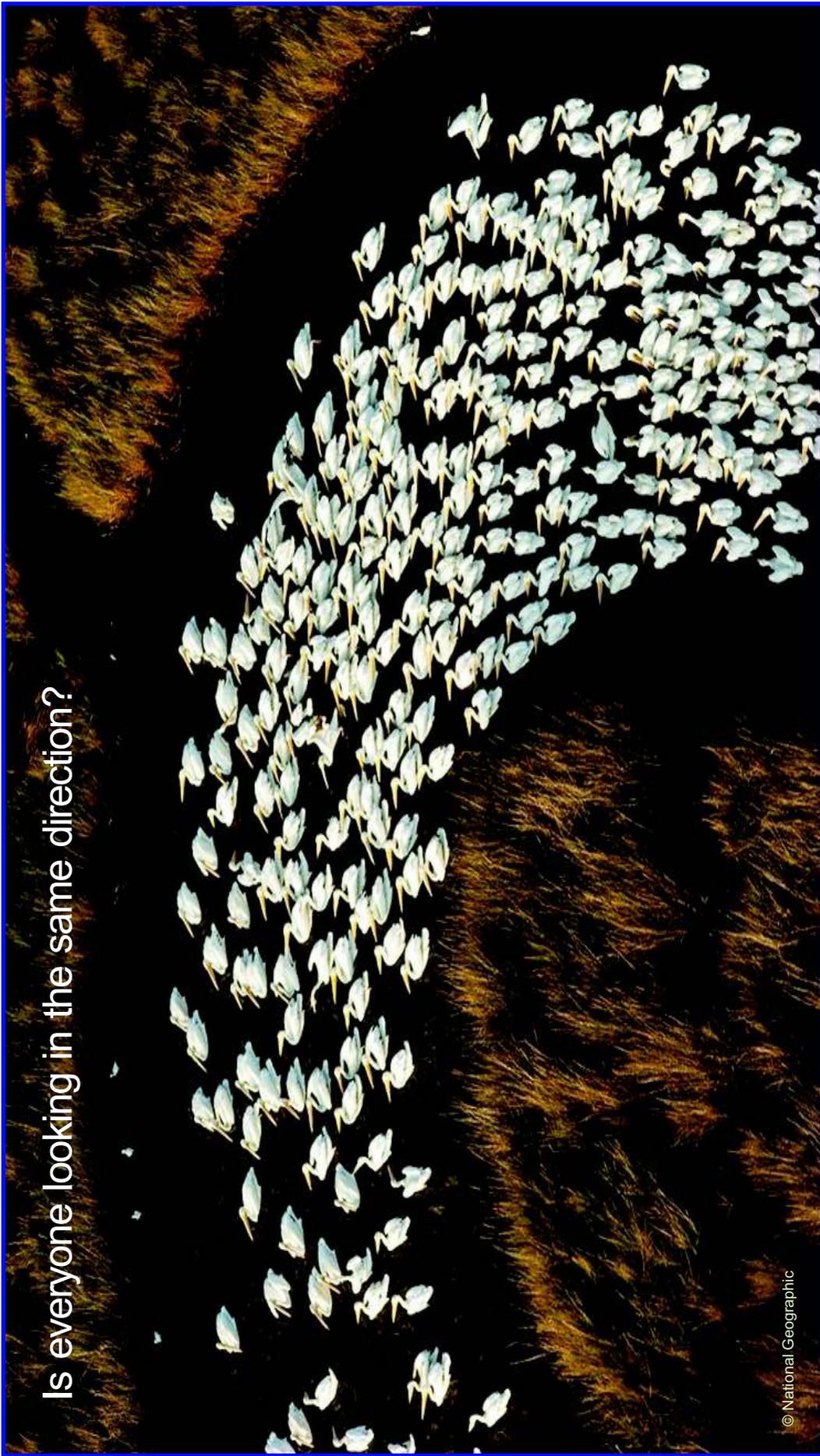
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Is everyone looking in the same direction?



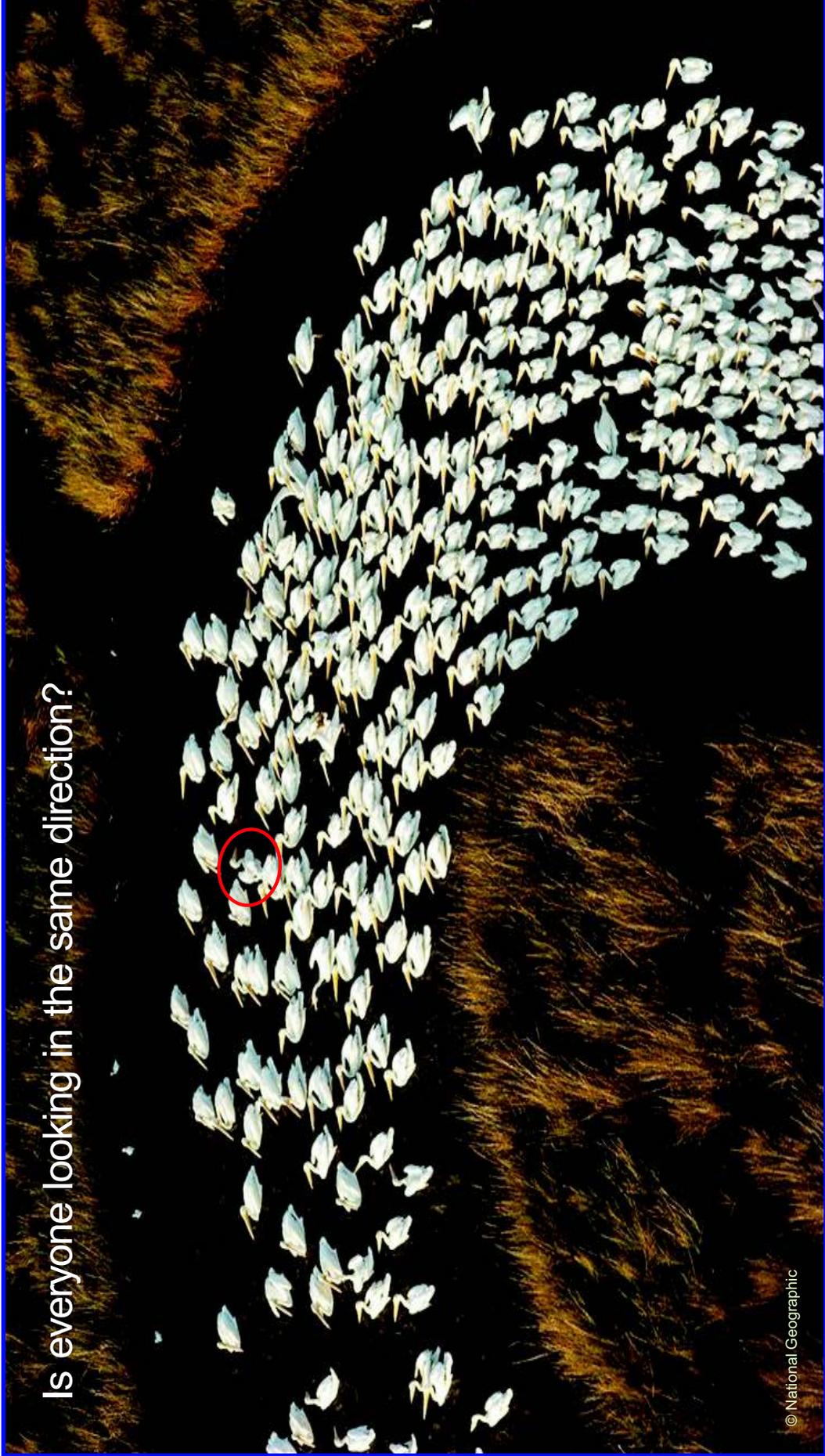
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Is everyone looking in the same direction?



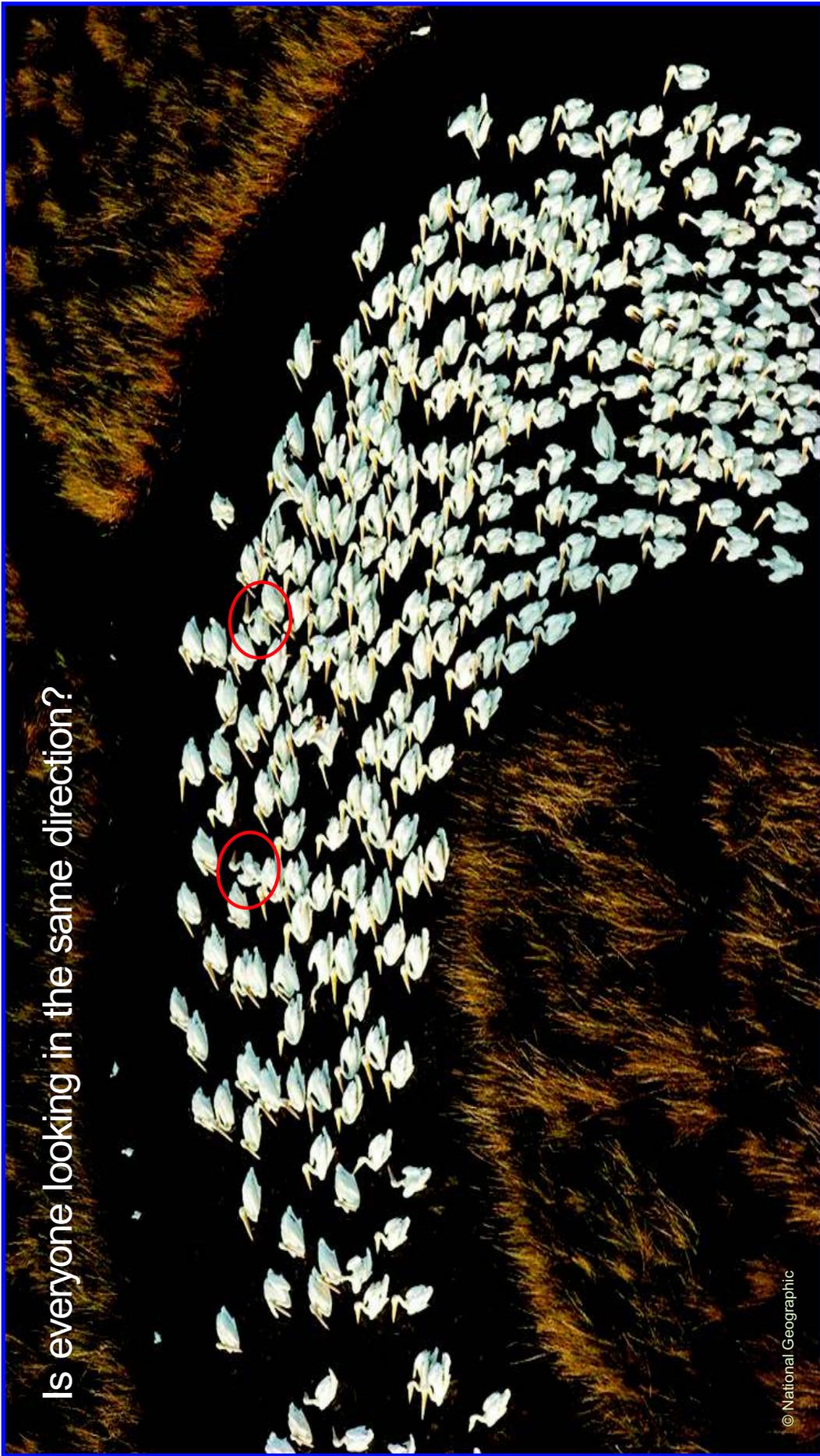
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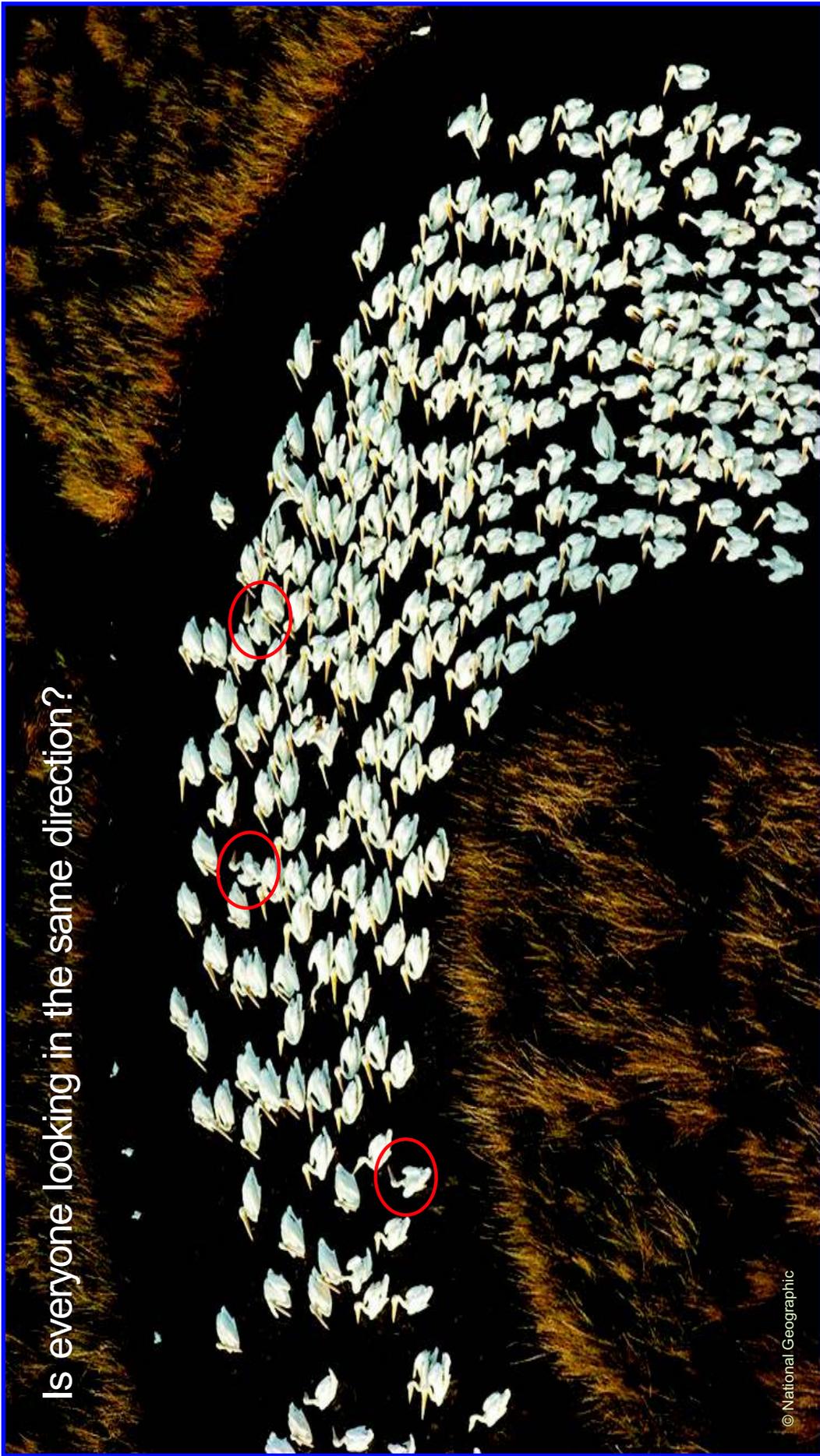
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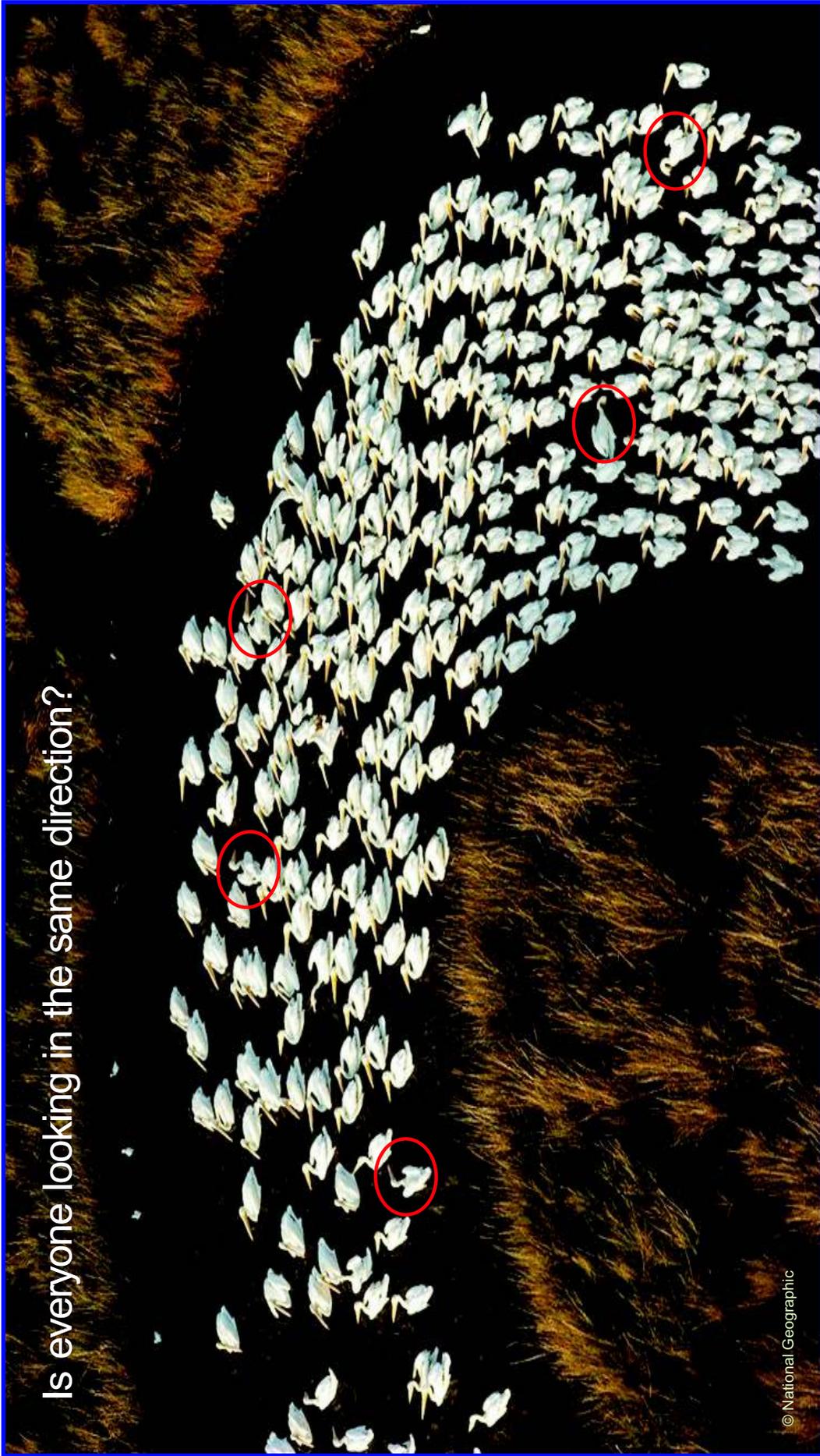
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Is everyone looking in the same direction?



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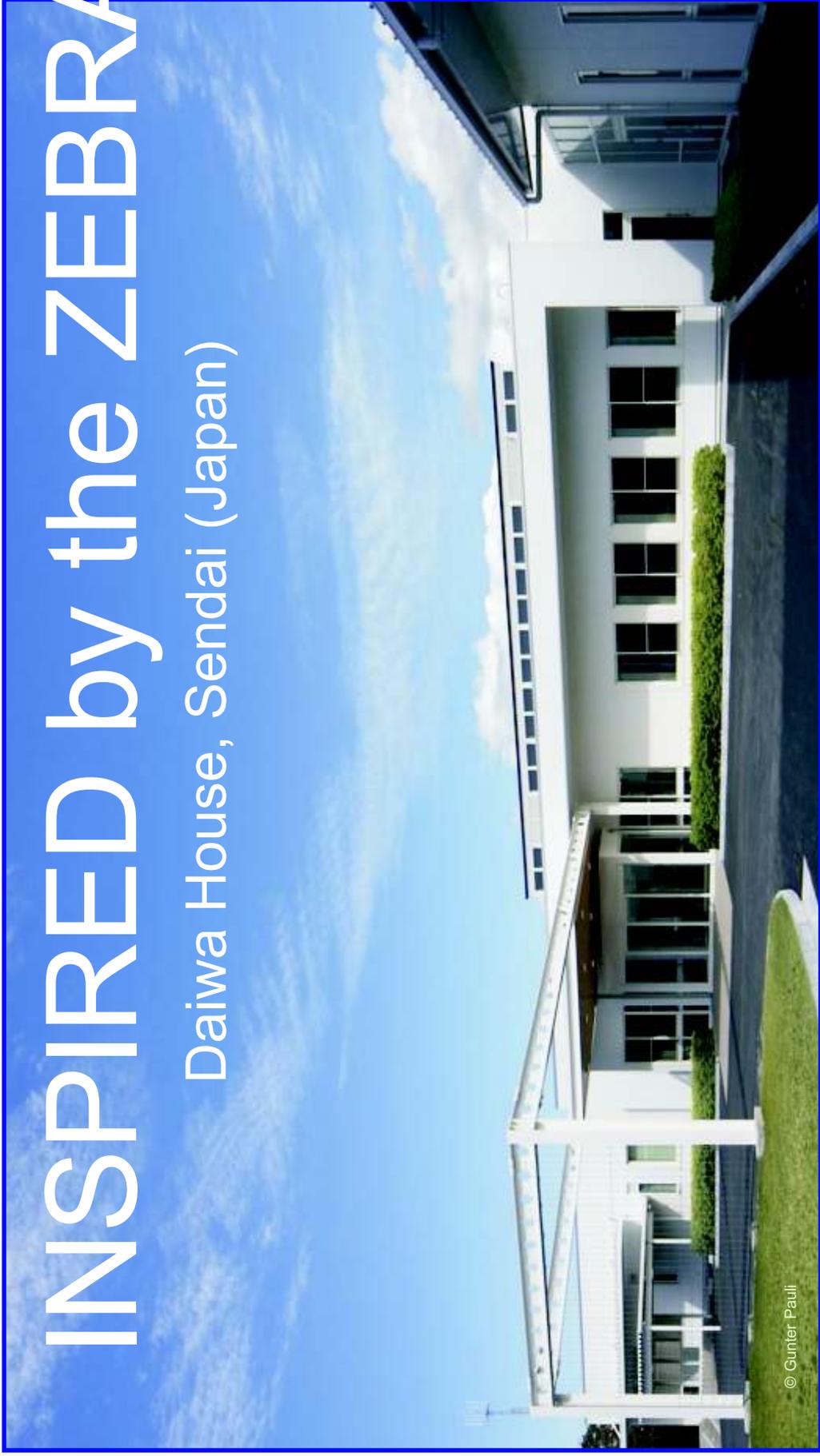


ventilation

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INSPIRED by the ZEBRA

Daiwa House, Sendai (Japan)



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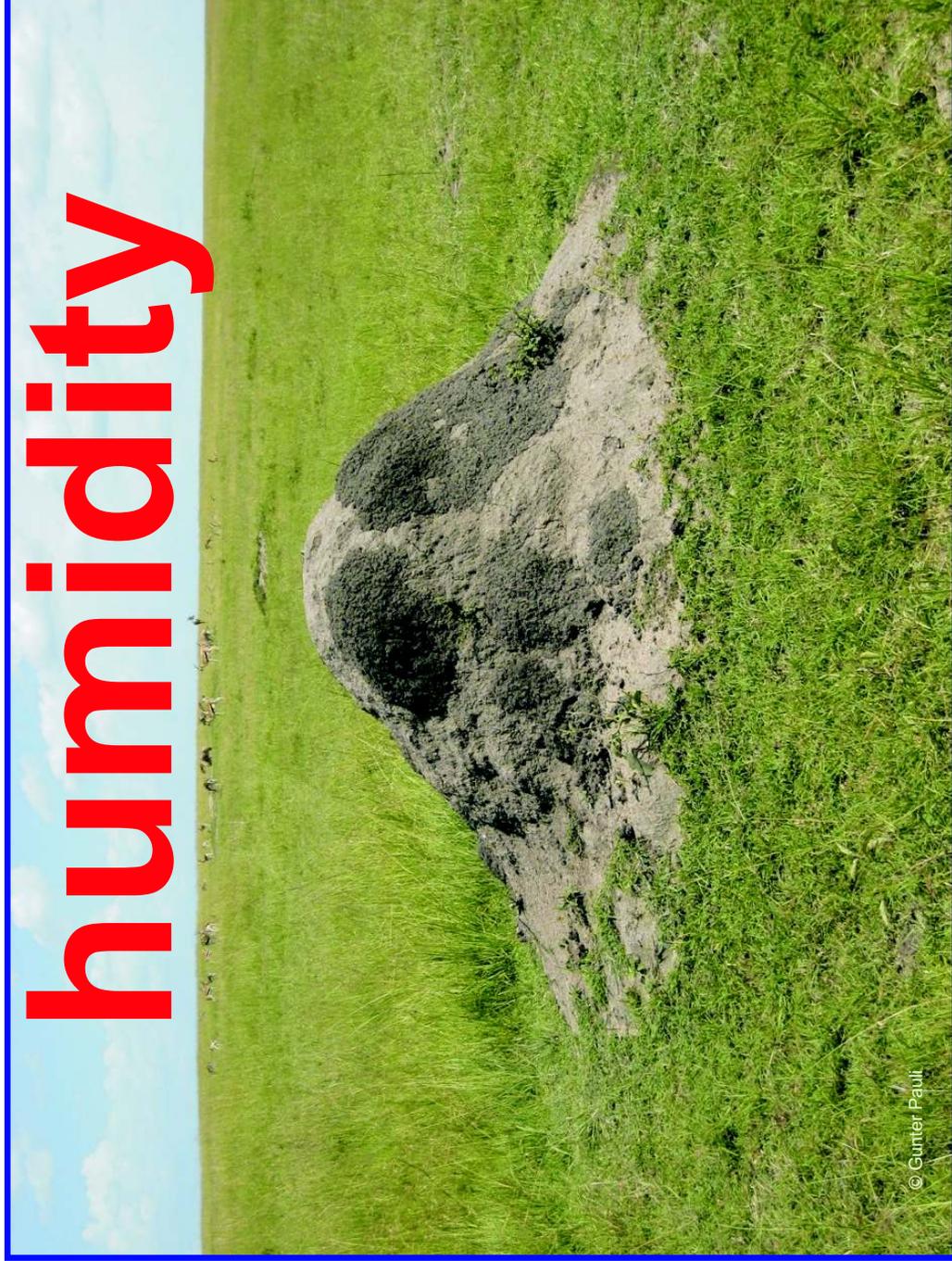
INSPIRED by the ZEBRA

Daiwa House, Sendai (Japan)

save energy, improve productivity, increase value of the building

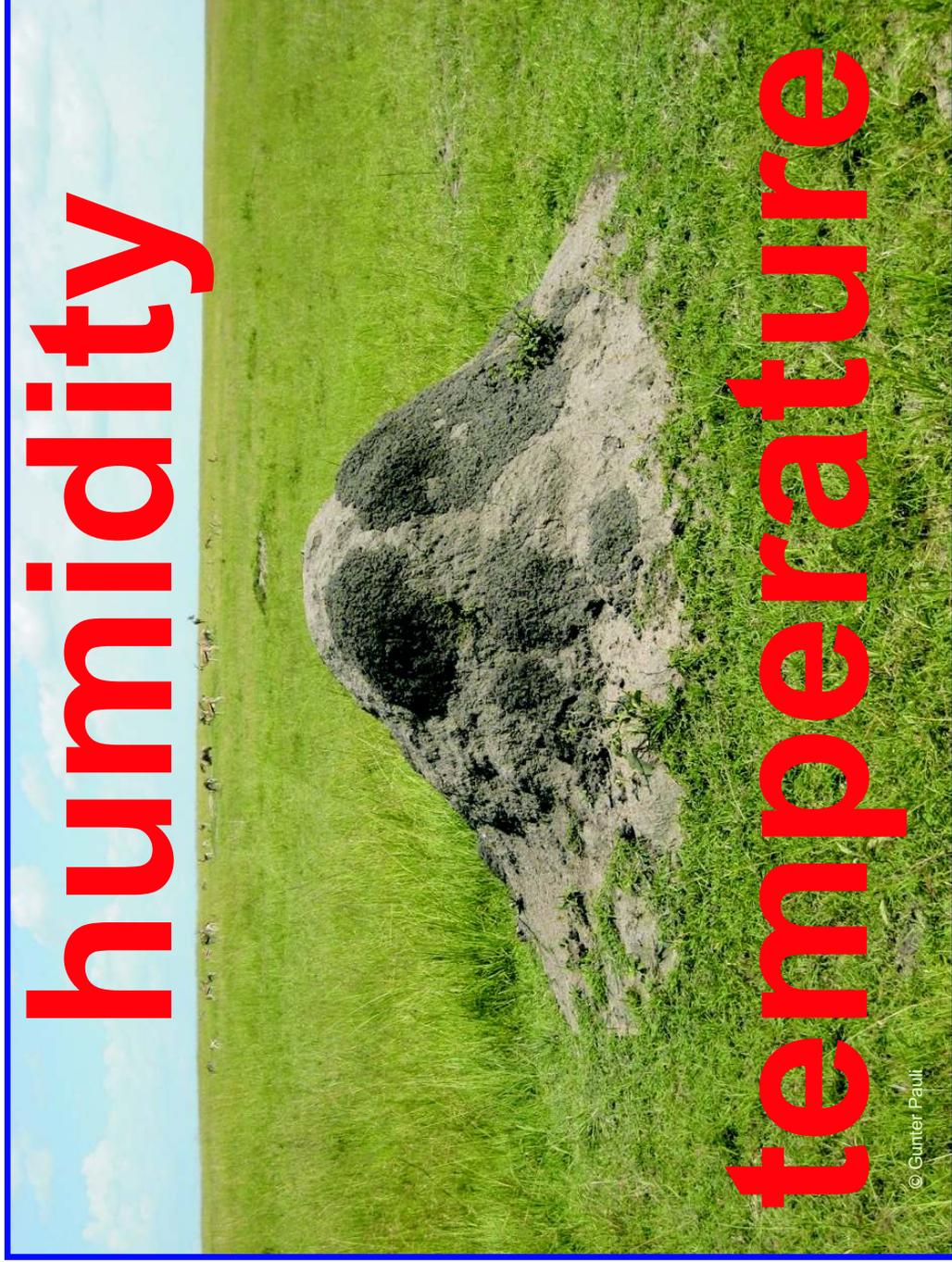
© Gunter Pauli

humidity



© Gunter Pauli

humidity



© Gunter Pauli

INSPIRED by TERMITES

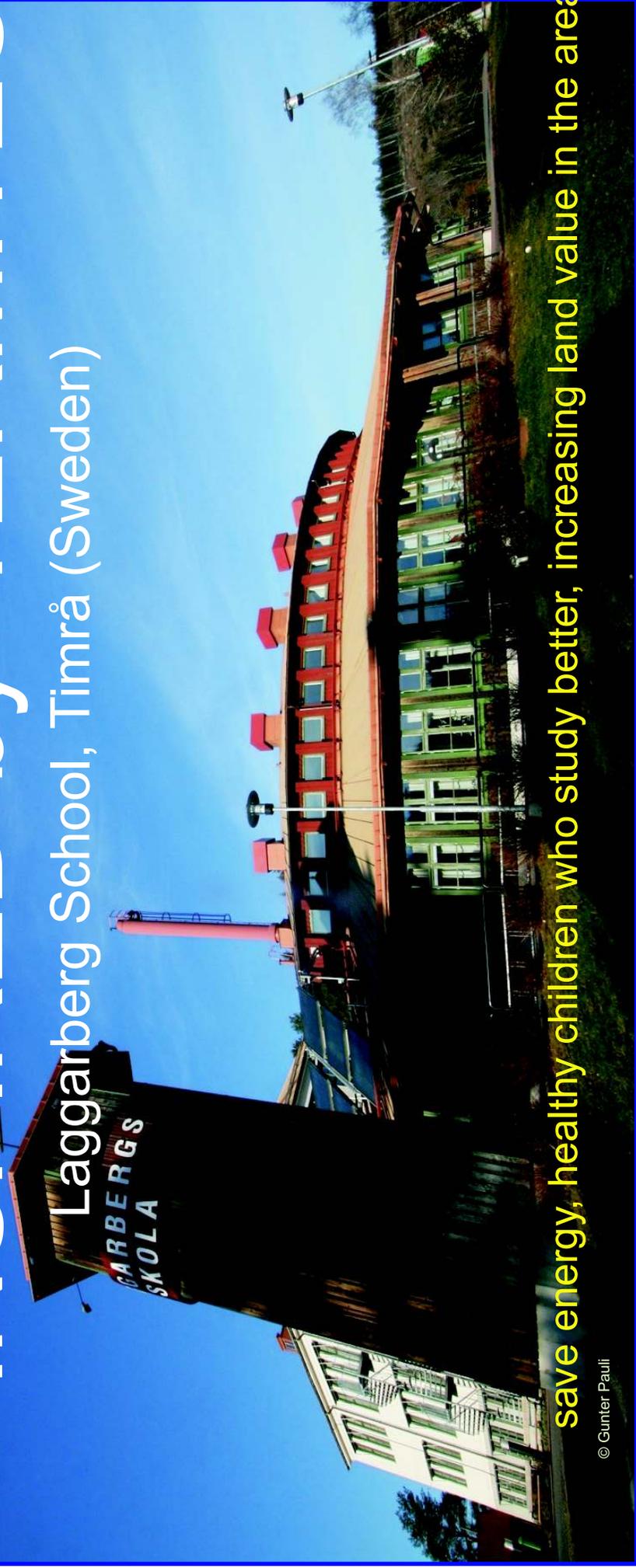
Laggarberg School, Timrå (Sweden)



© Gunter Pauli

INSPIRED by TERMITES

Laggarberg School, Timrå (Sweden)



save energy, healthy children who study better, increasing land value in the area

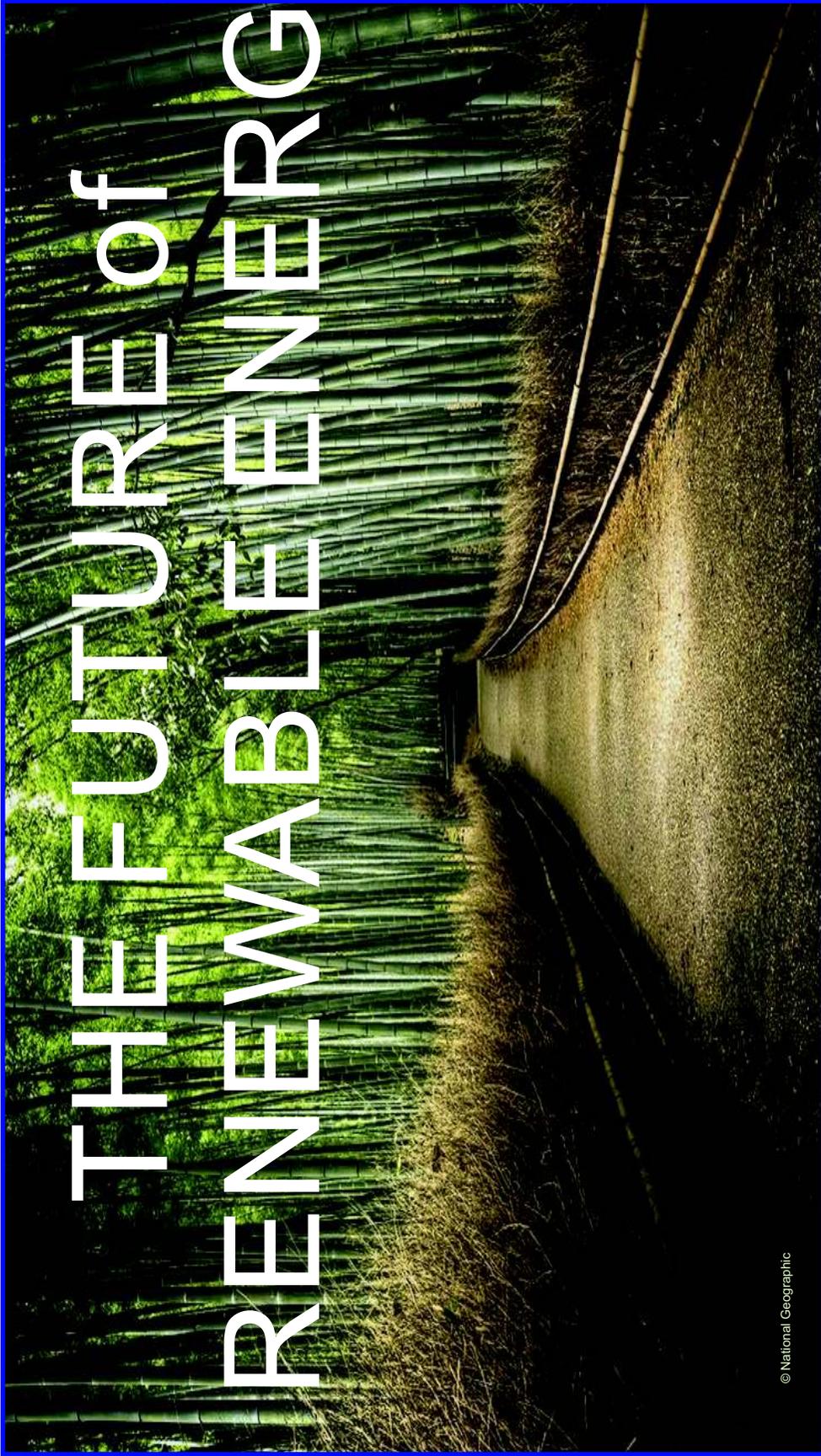
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THE FUTURE of RENEWABLE ENERGY



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THE FUTURE OF RENEWABLE ENERGY

generated with

WHAT YOU HAVE

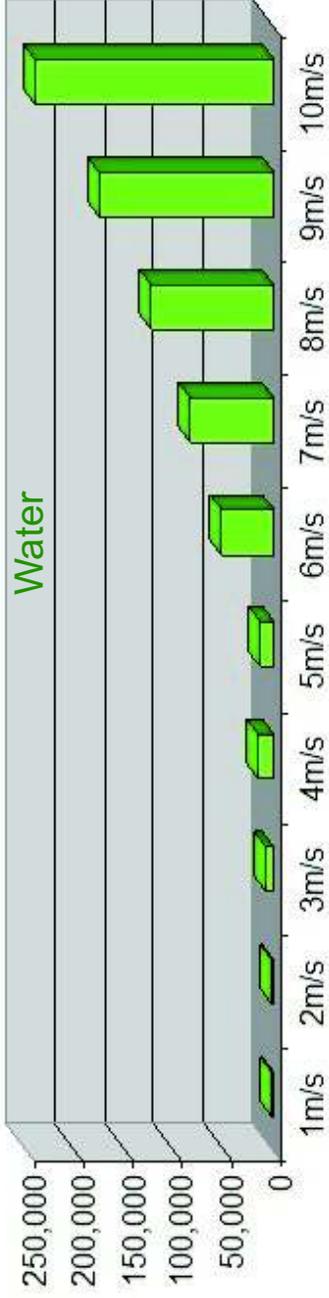
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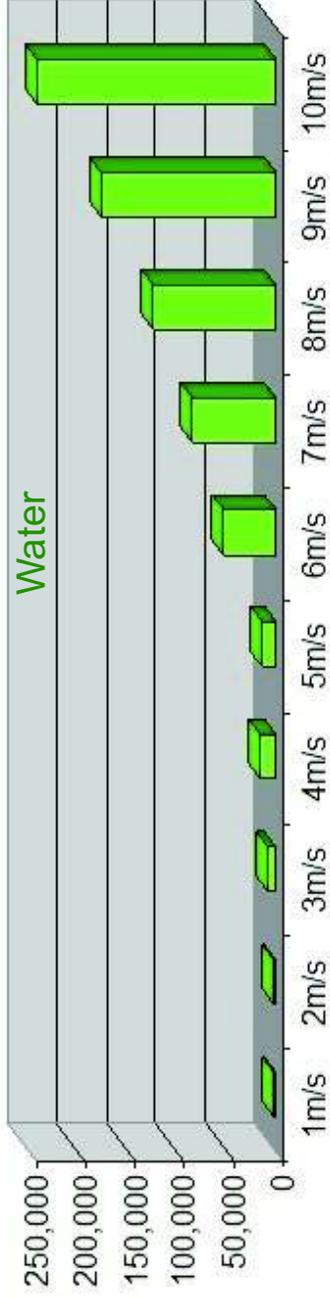
9th of November 2011

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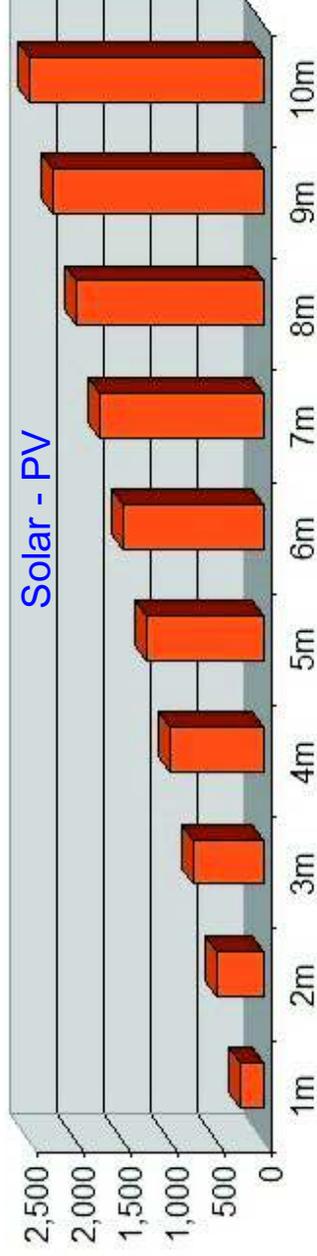
Watts/m³/sec



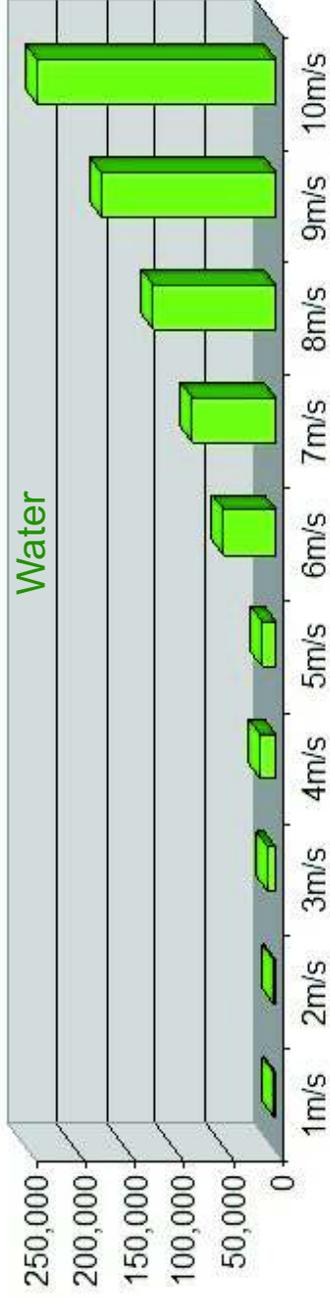
Watts/m³/sec



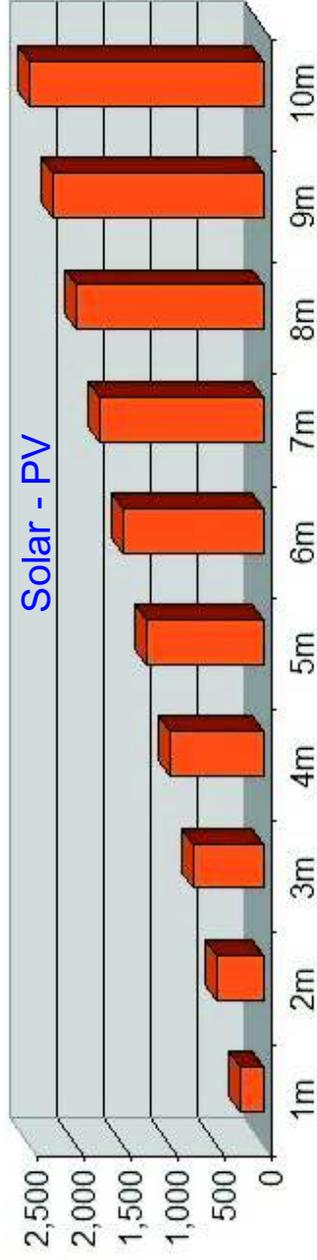
Watts/m²



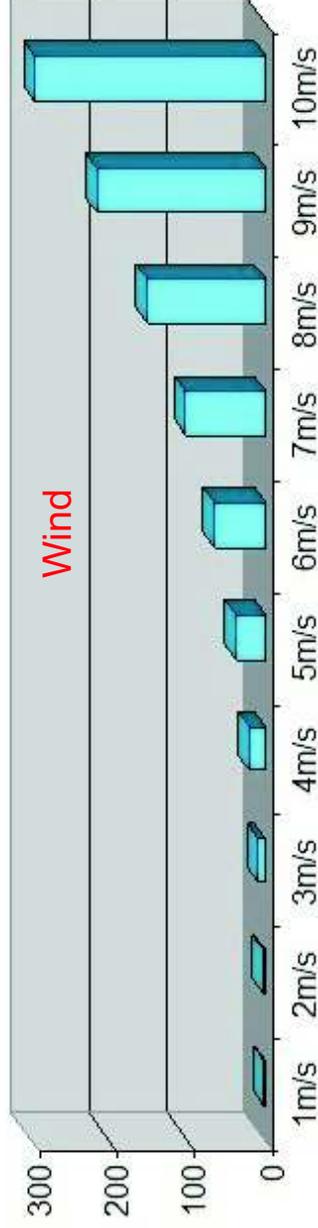
Watts/m³/sec



Watts/m²



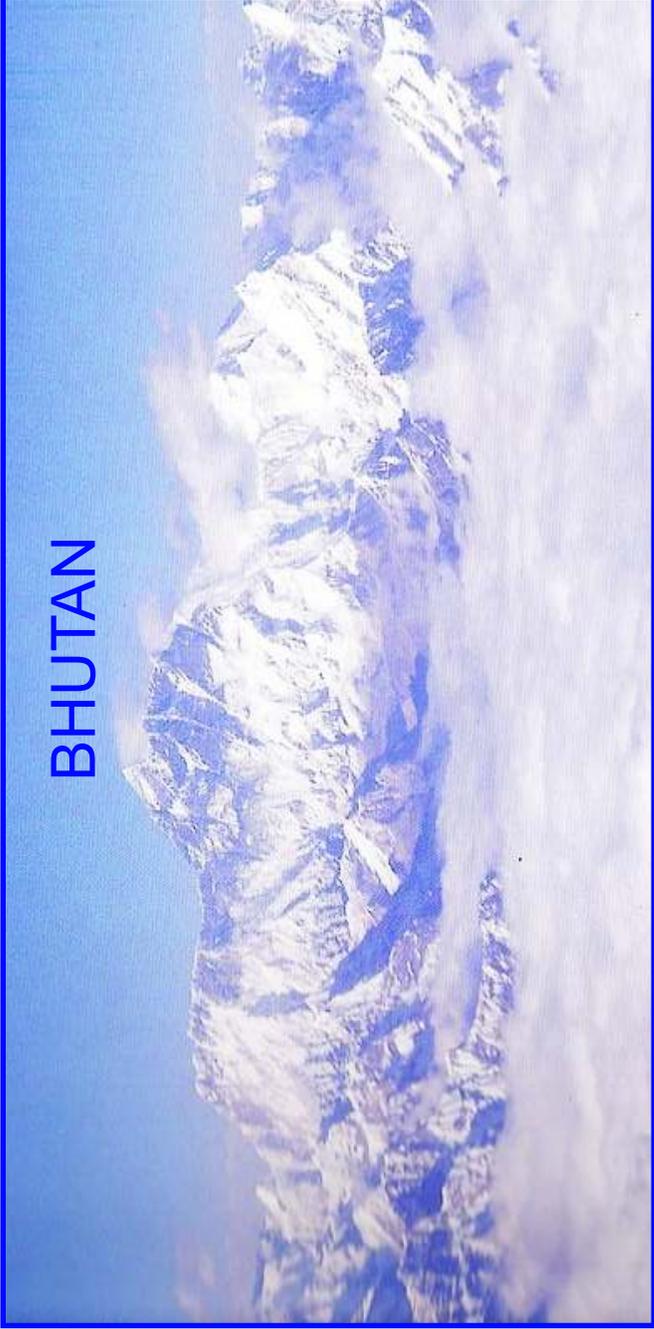
Watts/m/sec



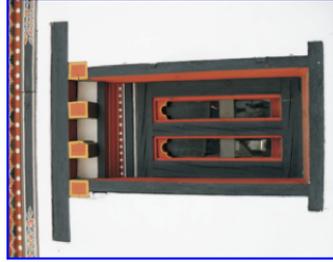
Water is **+800x** more dense
than air

Water is **+800x** more dense
than air

15 km/hr flow of water (8 knots)
equals
380 km/hr of wind



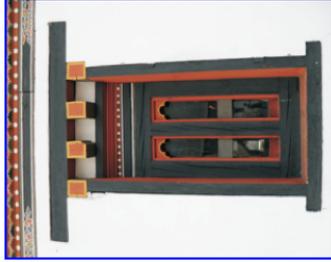
BHUTAN





BHUTAN

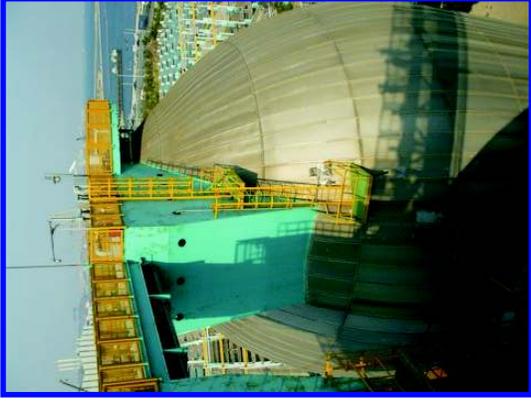
1,800 MW export in 2010
10,000 MW export in 2020





THE FUTURE of WASTE

Ulsan, Korea





100,000 population

15,000₃ methane gaz per day

or 5.5 million _{n3} methane gaz per year



© Gunter Pauli

100,000 population

15,000 methane gas per day

or 5.5 million methane gas per year

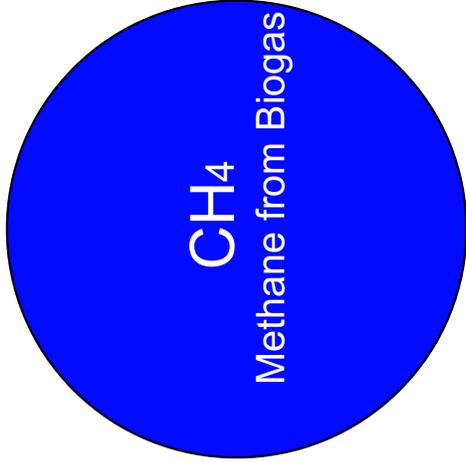
how many households?

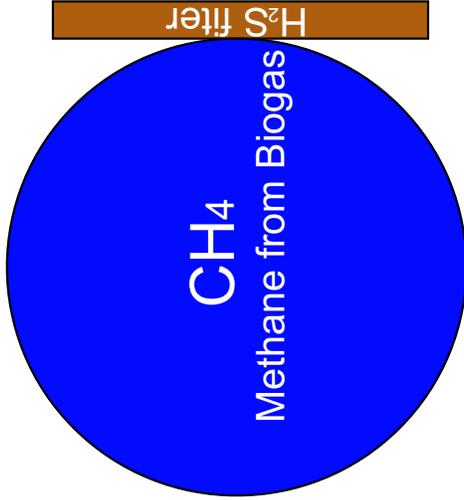
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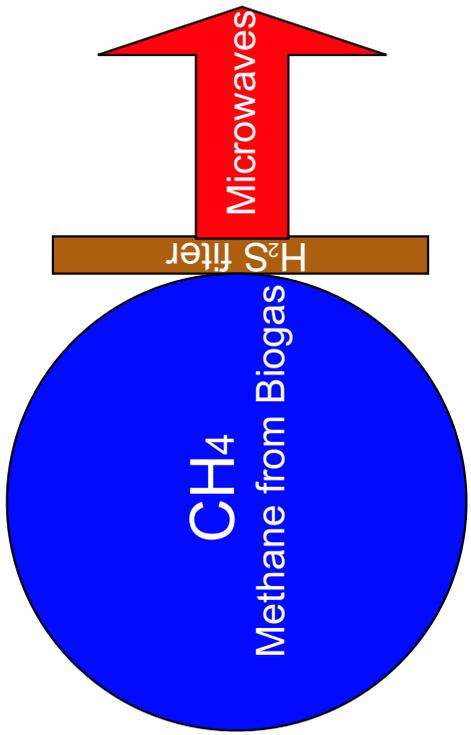
Waste Water Treatment and Landfill

Waste Water Treatment and Landfill

costs converted into income

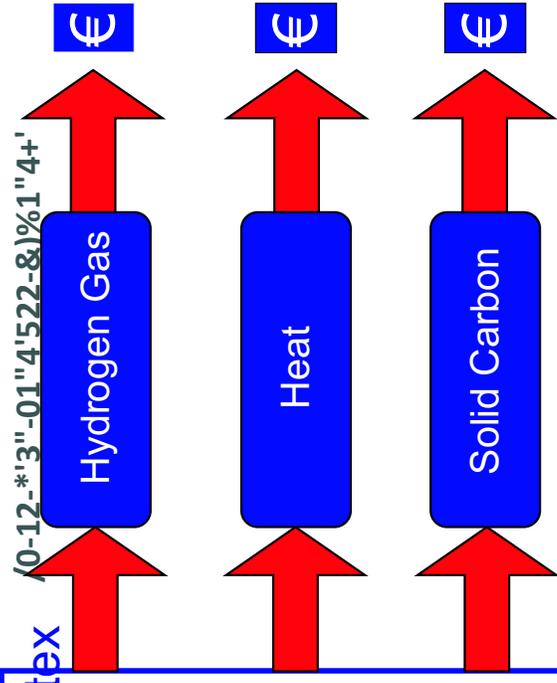
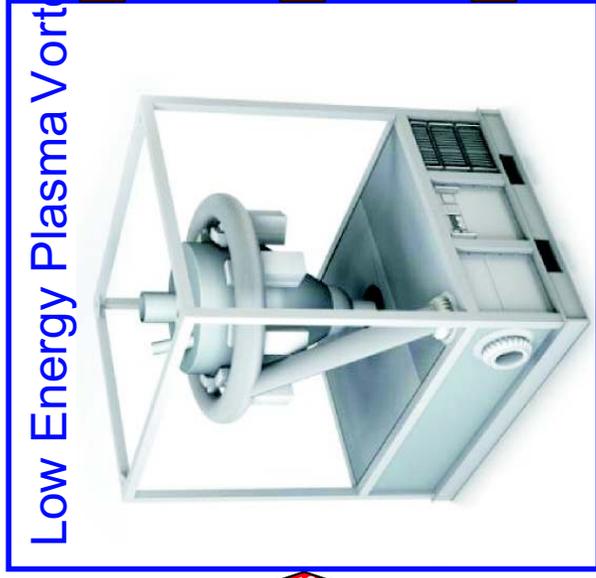
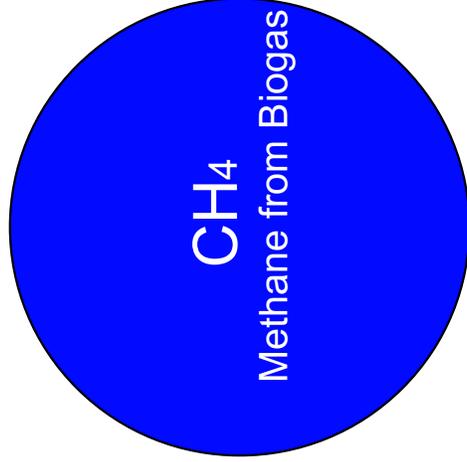






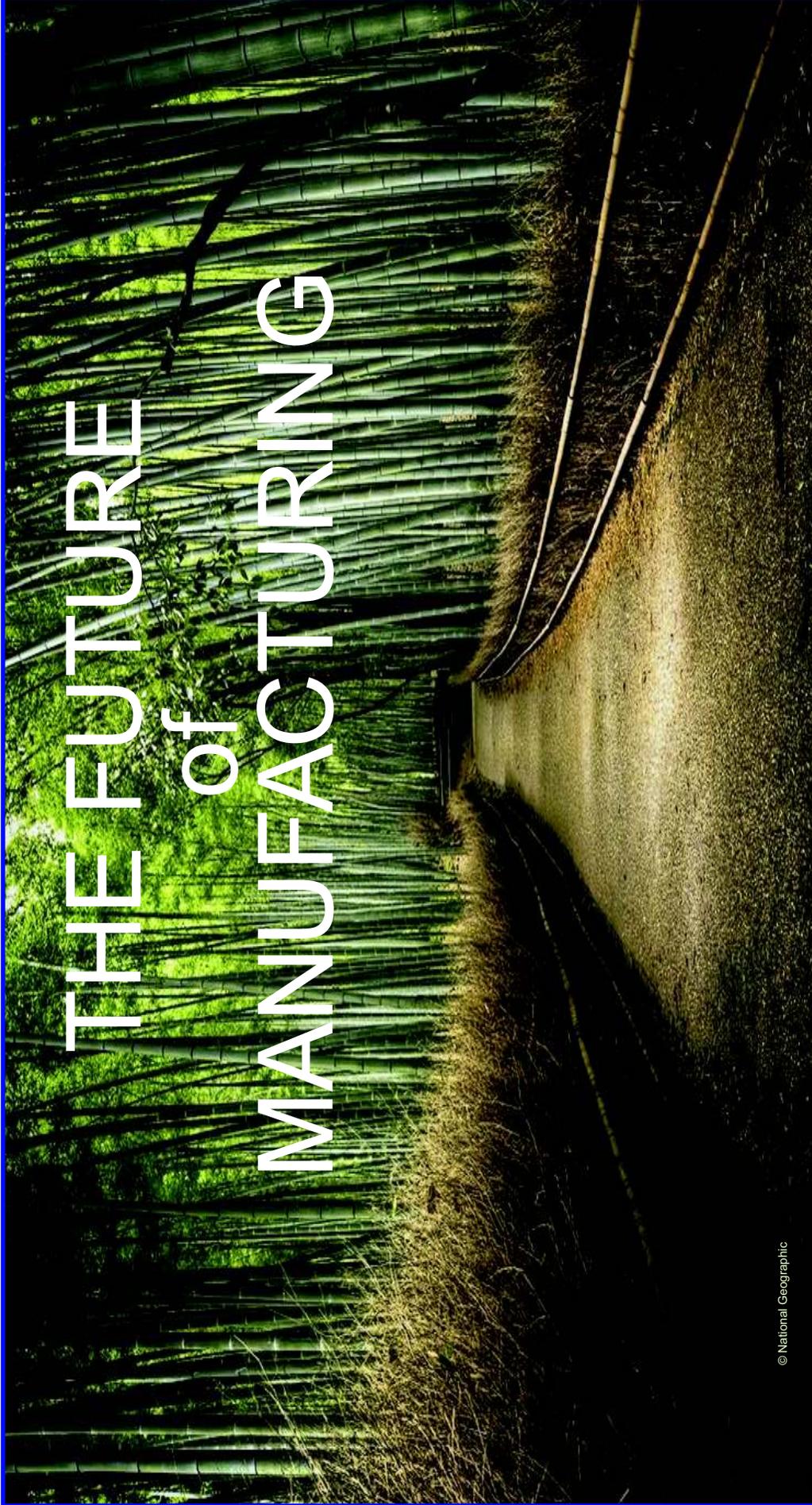
!"#\$%&'()*+,-.%)&#/0,(!*\$+1*,2'

!"#\$%&'()*+,"#'



PO-8" R0'9+}&2'

No Moving Parts



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THE FUTURE of MANUFACTURING

based on

LOCAL RESOURCES

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4kg of Ti

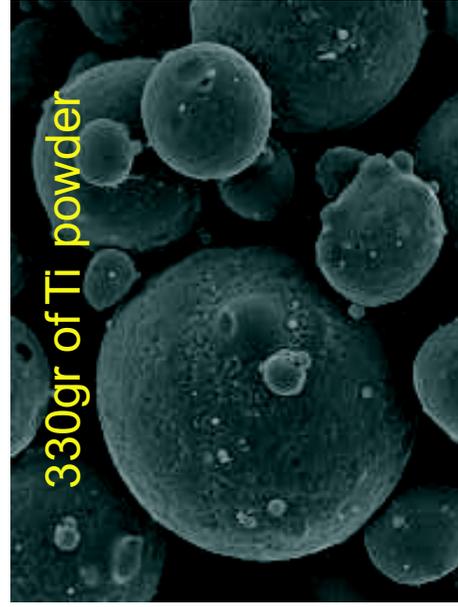


4kg of Ti

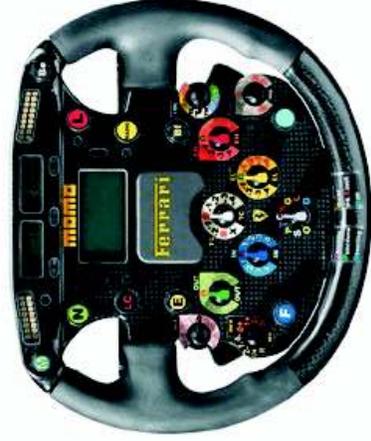


300gr of Ti

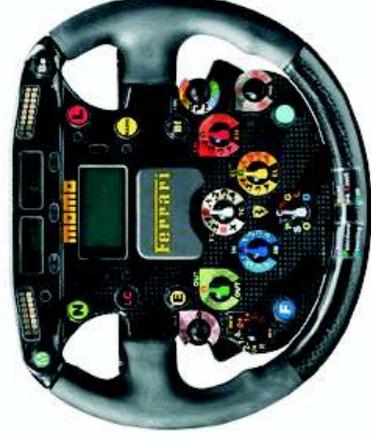
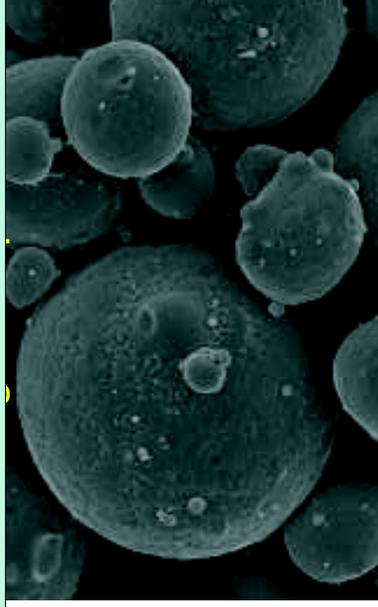




300gr of Ti

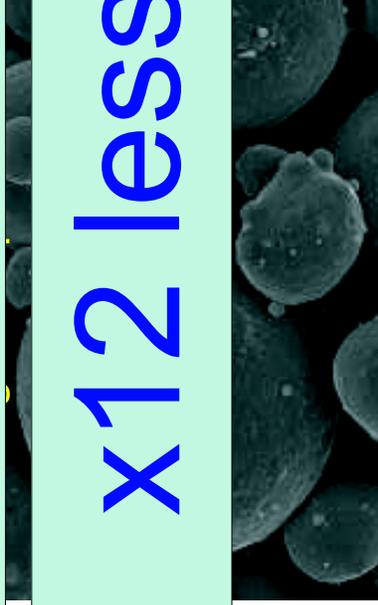


cold plasma + laser



cold plasma + laser

x12 less material



cold plasma + laser

x12 less material

no water

cold plasma + laser

x12 less material

no water

100% in-situ recycling

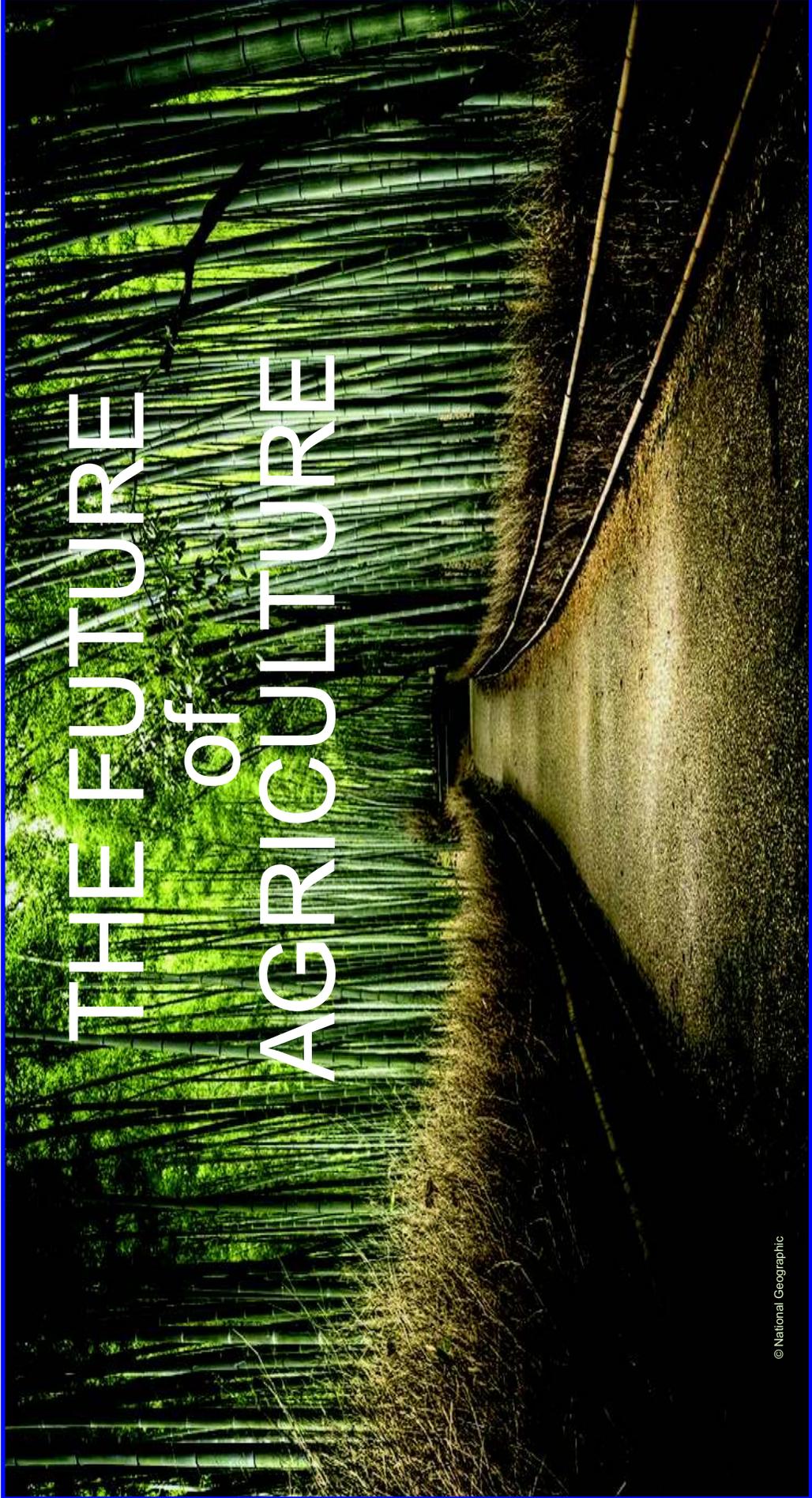
LOCAL FACTORIES OUTCOMPETE CHINA

cold plasma + laser

x12 less material

no water

100% in-situ recycling



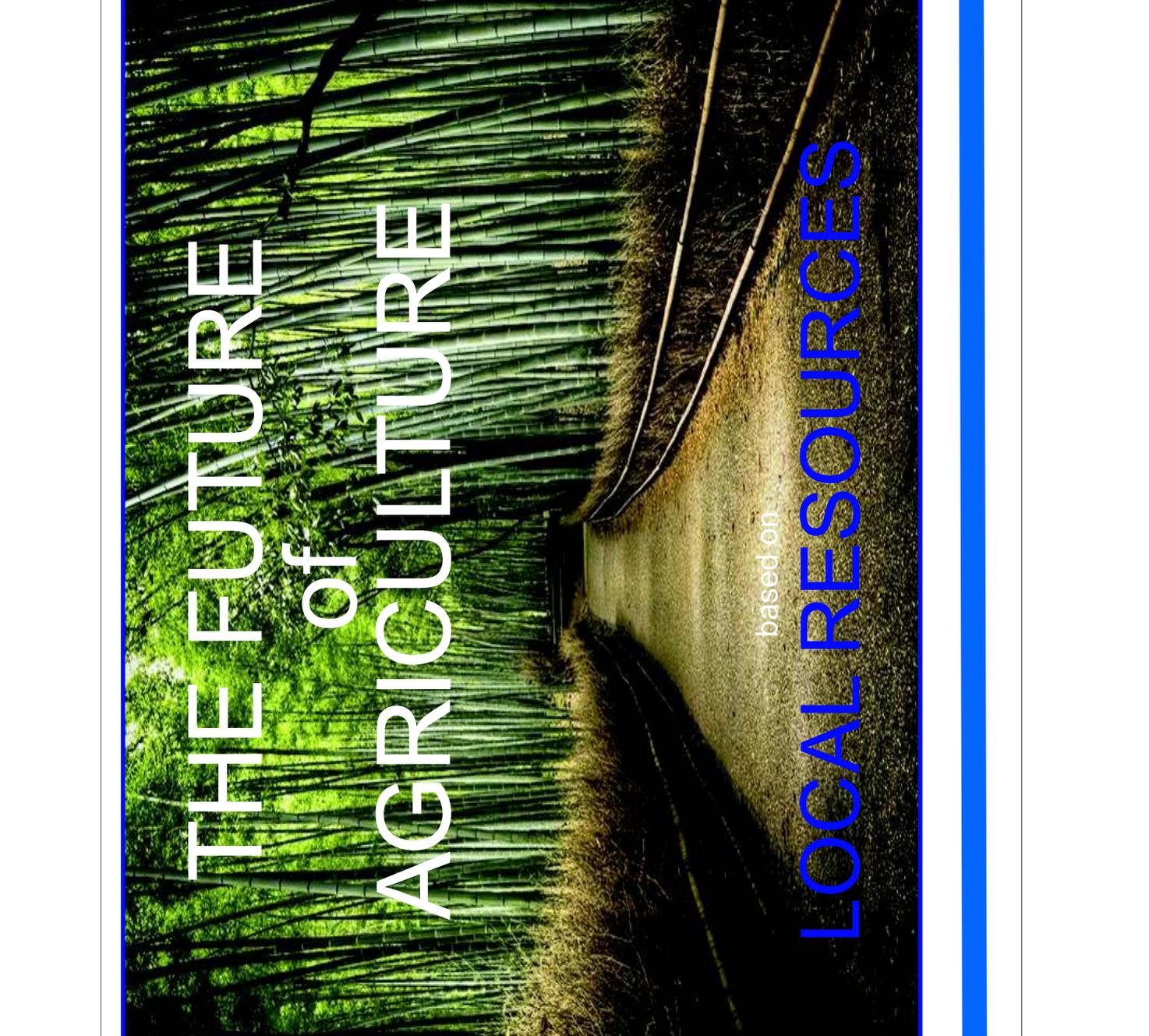
THE FUTURE of AGRICULTURE

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THE FUTURE of AGRICULTURE

based on

LOCAL RESOURCES

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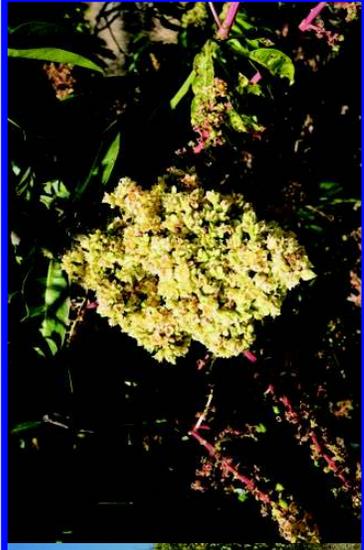
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Lisbon Farm next to Kruger Park,
South Africa

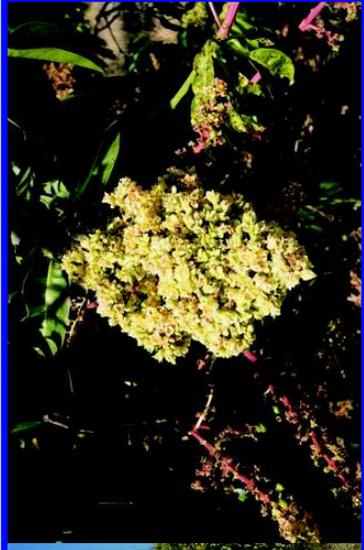


LODGES

LISBON FARM



Lisbon Farm next to Kruger Park,
South Africa



LODGES

LISBON FARM

FRUITS



Lisbon Farm next to Kruger Park,
South Africa



LODGES

JUICE

LISBON FARM

FRUITS



Lisbon Farm next to Kruger Park,
South Africa



LODGES

JUICE

LISBON FARM

PEELS

FRUITS



Lisbon Farm next to Kruger Park,
South Africa



LODGES

JUICE

PEELS

DETERGENTS

LISBON FARM

FRUITS



Lisbon Farm next to Kruger Park,
South Africa



LAUNDRY

DETERGENTS

JUICE

PEELS

LODGES

LISBON FARM

FRUITS



Lisbon Farm next to Kruger Park,
South Africa



LODGES

LAUNDRY

DETERGENTS

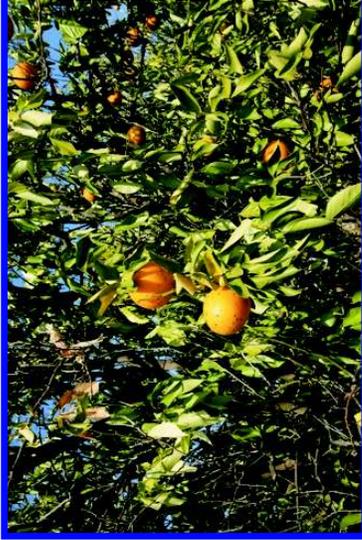
JUICE

PEELS

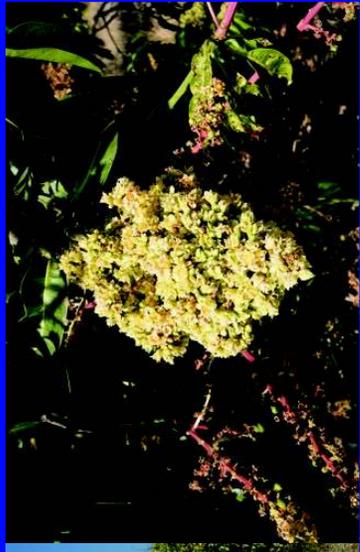
LISBON FARM

FRUITS

PRUNINGS



Lisbon Farm next to Kruger Park,
South Africa



LODGES

LAUNDRY

DETERGENTS

JUICE

PEELS

LISBON FARM

FRUITS

REMOVAL
NON-NATIVE

PRUNINGS



Lisbon Farm next to Kruger Park,
South Africa



LODGES

LAUNDRY

DETERGENTS

JUICE

PEELS

LISBON FARM

FRUITS

REMOVAL
NON-NATIVE

PRUNINGS

MUSHROOMS



Lisbon Farm next to Kruger Park,
South Africa



LODGES

LAUNDRY

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JUICE

PEELS

LISBON FARM

FRUITS

REMOVAL
NON-NATIVE

PRUNINGS

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park,
South Africa



LODGES

LAUNDRY

DETERGENTS

JUICE

PEELS

LISBON FARM

FRUITS

WOOD as
CONSTRUCTION
MATERIAL

REMOVAL
NON-NATIVE

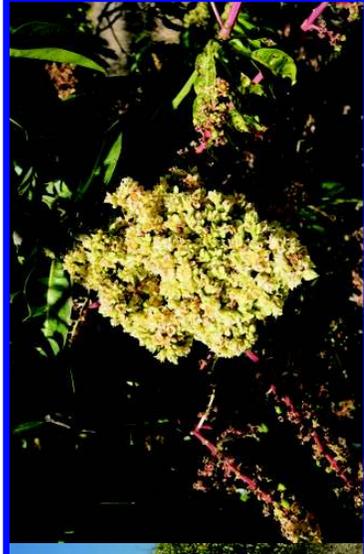
PRUNINGS

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park,
South Africa



LODGES

LAUNDRY

DETERGENTS

JUICE

PEELS

ANIMAL FEED

LISBON FARM

FRUITS

WOOD as
CONSTRUCTION
MATERIAL

REMOVAL
NON-NATIVE

PRUNINGS

ANIMAL FEED

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park,
South Africa



FOODWASTE

LAUNDRY

DETERGENTS

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LISBON FARM

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PRUNINGS

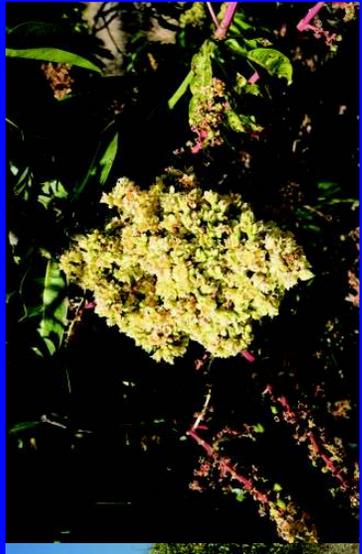
ANIMAL FEED

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park, South Africa



FOODWASTE

LAUNDRY

DETERGENTS

PIGS

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PRUNINGS

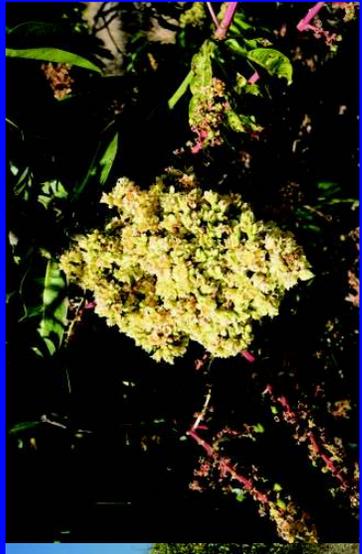
ANIMAL FEED

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park, South Africa



FOODWASTE

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ANIMAL FEED

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PRUNINGS

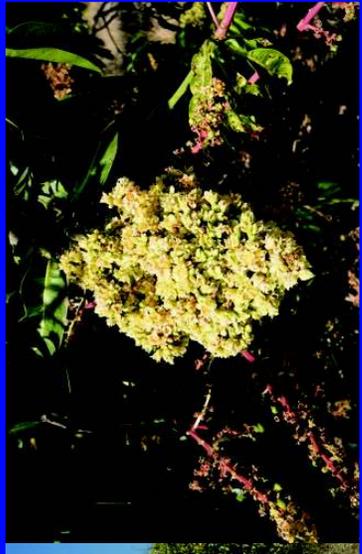
ANIMAL FEED

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park,
South Africa



FOODWASTE

LAUNDRY

DETERGENTS

PIGS

BIOGAS

JUICE

PEELS

ANIMAL FEED

LODGES

LISBON FARM

1 FRUITS

WOOD as
CONSTRUCTION
MATERIAL

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NON-NATIVE

PRUNINGS

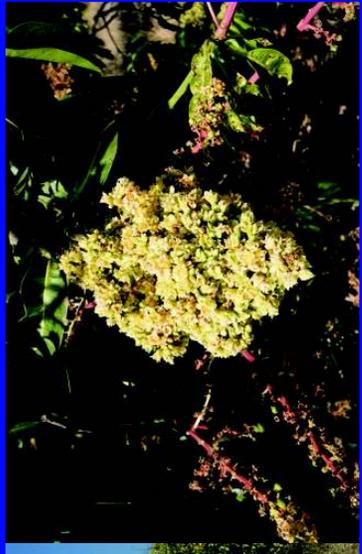
ANIMAL FEED

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park, South Africa



FOODWASTE

LAUNDRY

DETERGENTS

PIGS

BIOGAS

JUICE 2

PEELS

ANIMAL FEED

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LISBON FARM

1 FRUITS

WOOD as
CONSTRUCTION
MATERIAL

REMOVAL
NON-NATIVE

PRUNINGS

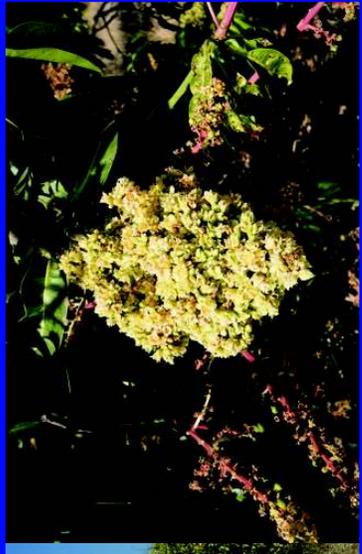
ANIMAL FEED

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park, South Africa



FOODWASTE

LAUNDRY

DETERGENTS 3

PIGS

BIOGAS

JUICE 2

PEELS

ANIMAL FEED

LODGES

LISBON FARM

1 FRUITS

WOOD as CONSTRUCTION MATERIAL

REMOVAL NON-NATIVE

PRUNINGS

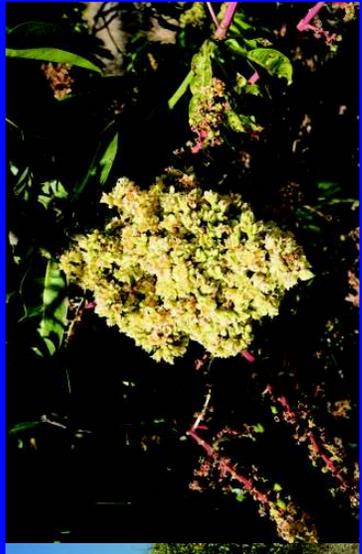
ANIMAL FEED

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park, South Africa



FOODWASTE

LAUNDRY 4

DETERGENTS 3

PIGS

BIOGAS

JUICE 2

PEELS

ANIMAL FEED

LODGES

LISBON FARM

1 FRUITS

WOOD as CONSTRUCTION MATERIAL

REMOVAL NON-NATIVE

PRUNINGS

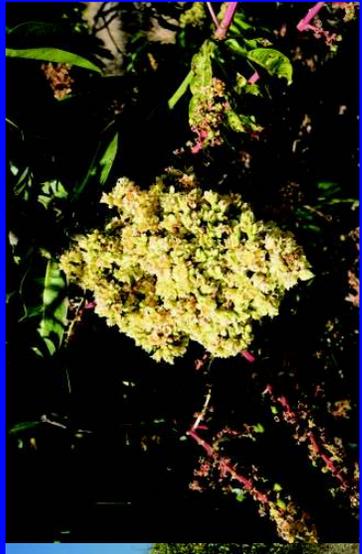
ANIMAL FEED

FIREWOOD

MUSHROOMS



Lisbon Farm next to Kruger Park, South Africa



FOODWASTE

LAUNDRY 4

DETERGENTS 3

PIGS

BIOGAS

JUICE 2

PEELS

ANIMAL FEED

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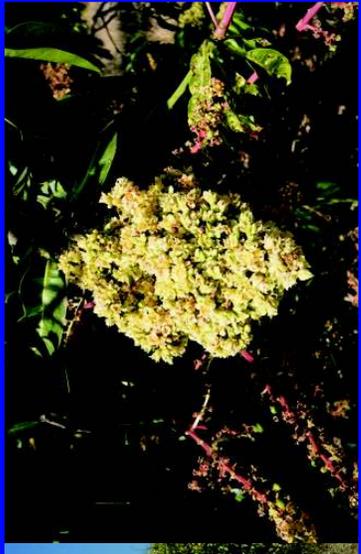
ANIMAL FEED

FIREWOOD

MUSHROOMS 5



Lisbon Farm next to Kruger Park, South Africa



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ANIMAL FEED

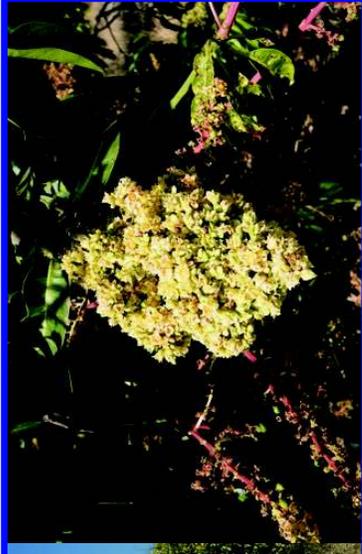
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FIREWOOD 6

MUSHROOMS 5



Lisbon Farm next to Kruger Park, South Africa



FOODWASTE

LAUNDRY 4

DETERGENTS 3

PIGS 8

BIOGAS

JUICE 2

PEELS

ANIMAL FEED

LODGES

LISBON FARM

1 FRUITS

WOOD as
CONSTRUCTION
MATERIAL 7

REMOVAL
NON-NATIVE

PRUNINGS

ANIMAL FEED

FIREWOOD 6

MUSHROOMS 5



Lisbon Farm next to Kruger Park, South Africa



FOODWASTE

LAUNDRY 4

DETERGENTS 3

PIGS 8

BIOGAS 9

JUICE 2

PEELS

ANIMAL FEED

LODGES

LISBON FARM

1 FRUITS

WOOD as
CONSTRUCTION
MATERIAL 7

REMOVAL
NON-NATIVE

PRUNINGS

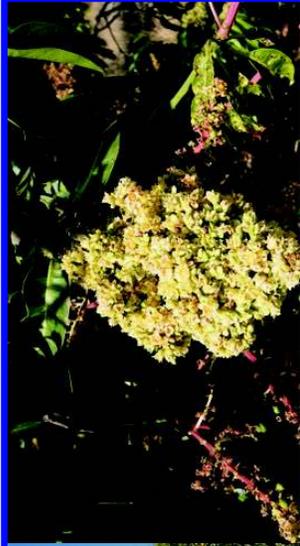
ANIMAL FEED

FIREWOOD 6

MUSHROOMS 5



Lisbon Farm next to Kruger Park,
South Africa



local farms generate more

FOODWASTE

LAUNDRY 4

DETERGENTS 3

PIGS 8

BIOGAS 9

JUICE 2

PEELS

ANIMAL FEED

LODGES

LISBON FARM

1 FRUITS

WOOD as
CONSTRUCTION
MATERIAL 7

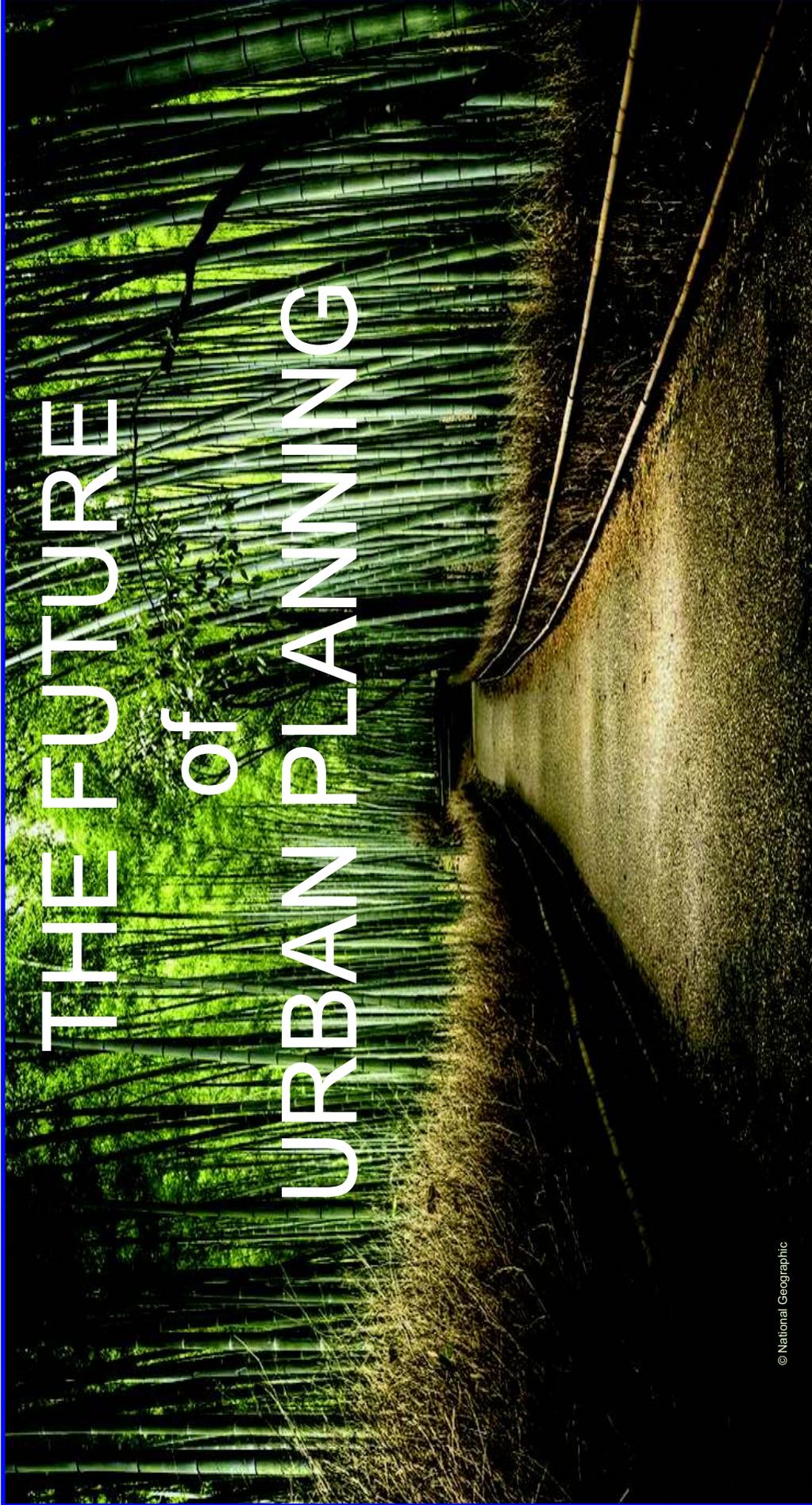
REMOVAL
NON-NATIVE

PRUNINGS

ANIMAL FEED

FIREWOOD 6

MUSHROOMS 5

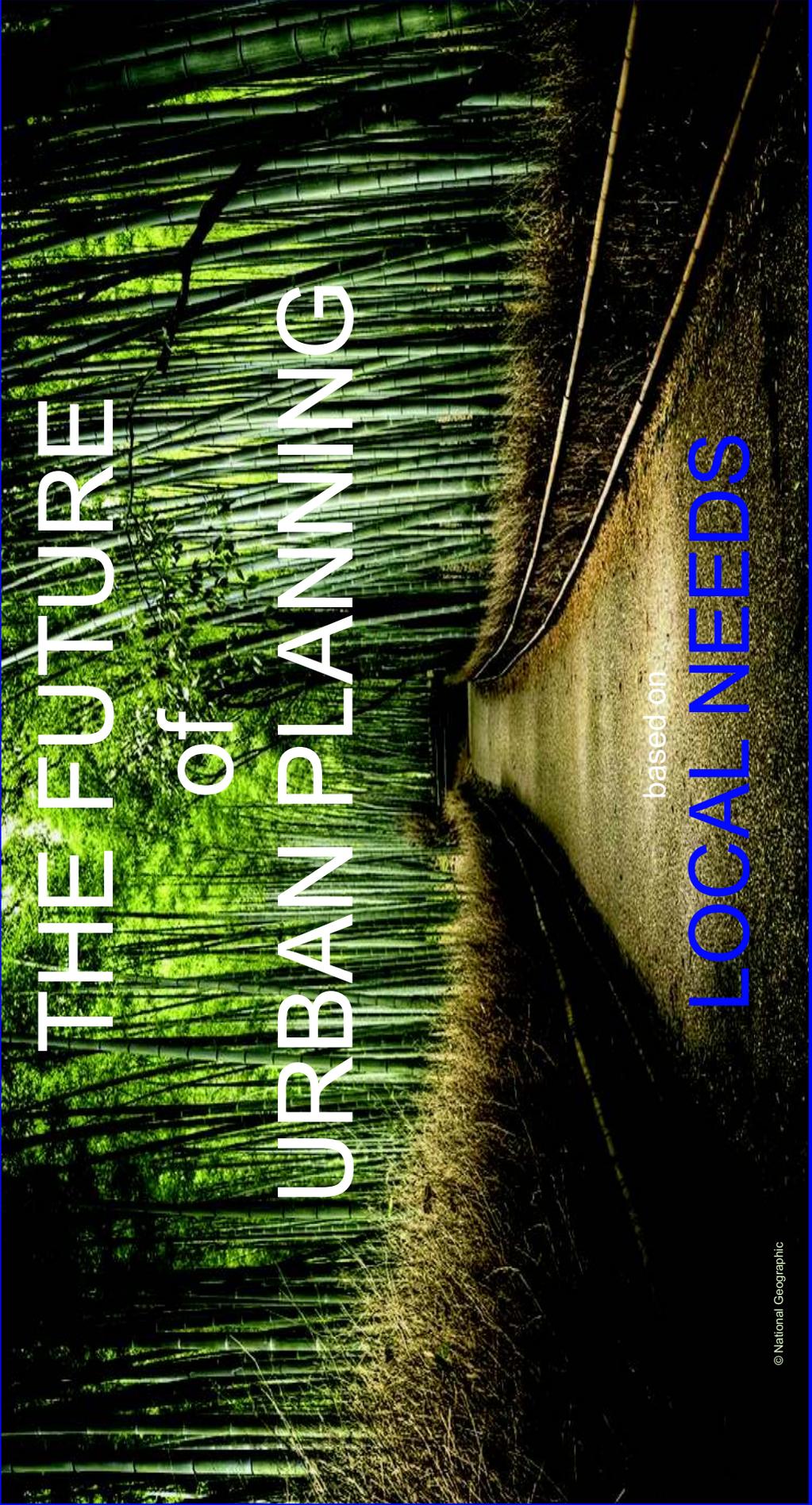


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The Club of Rome

9th of November 2011

Wednesday 9 November 2011



THE FUTURE of URBAN PLANNING

based on

LOCAL NEEDS

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The Club of Rome

9th of November 2011

Wednesday 9 November 2011

Where do we start?

Where do we start?

Responding to the Basic Needs **AdF**

Water

Energy

Housing

Health

Food

Jobs

Education

Where do we start?

Responding to the Basic Needs **AdF**

Money Drains Out of the Area

We Connect the Key Challenge

No Jobs

Imminent
Nuclear
Closure

Landfill

Landfil Closure

Closed Open Quarries

Money Drains Out of the Area

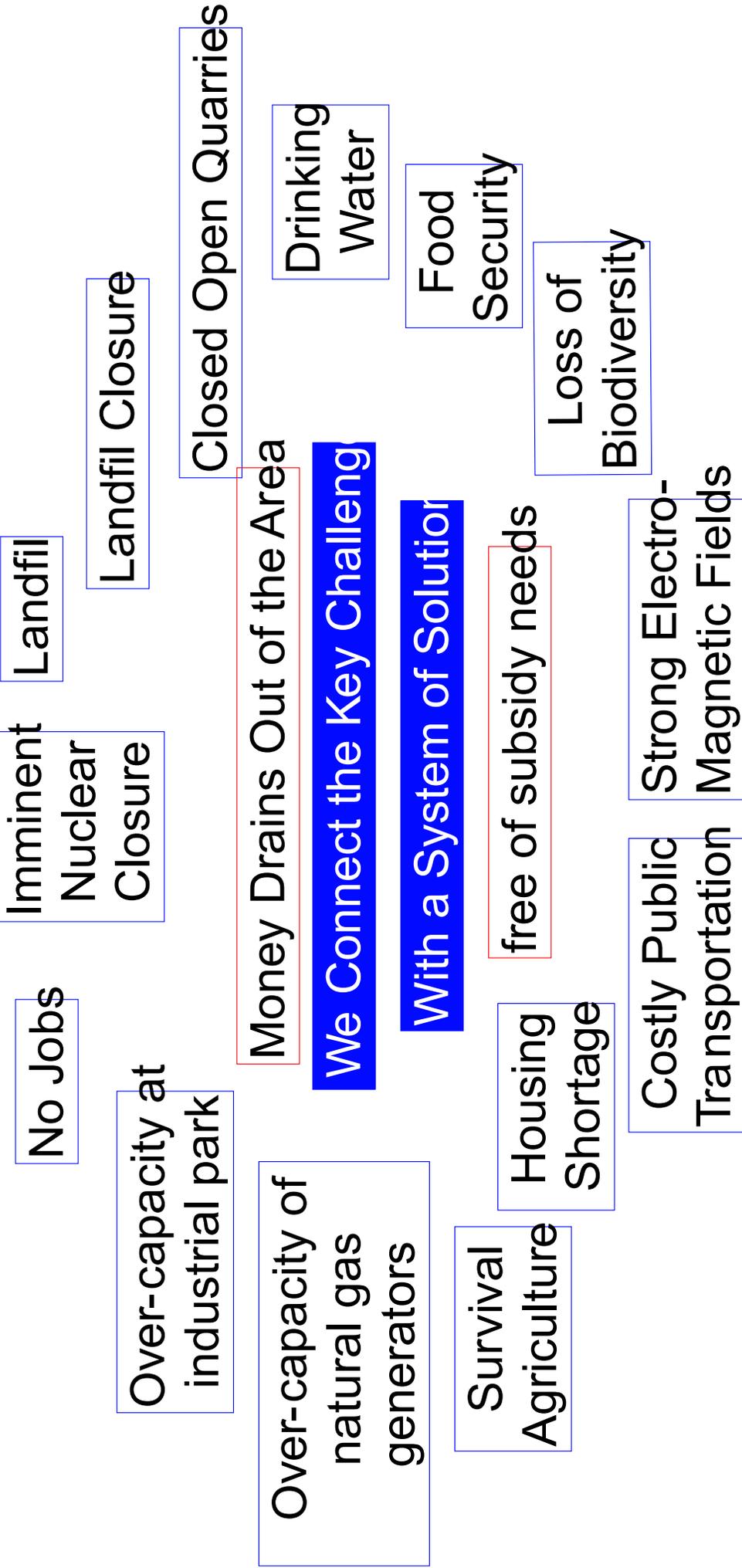
We Connect the Key Challenges

Drinking
Water

Food
Security

Loss of
Biodiversity





Solutions

Solutions

that generate local jobs and build social ca

Highest
Concentration
of Renewables
in Africa
using existing grid

Urban Mining
for building materials

using existing grid

Landfill as Platform
for Renewables

Solutions

Water
Cycles

that generate local jobs and build social ca

Healthy Food

Biodiversity
Corridors

Vertical Turbine
inside Pylons

Jobs

Create New Industries
Responding FIRST
to local needs

Highest
Concentration
of Renewables
in Africa
using existing grid

Urban Mining
for building materials

Landfill as Platform
for Renewables

Natural gas
generators with
spirulina farm

Solutions

that generate local jobs and build social ca

Water
Cycles

Urban and
Seawater
Agriculture

Healthy Food

Electric Bus
Feeder System

Vertical Turbine
inside Pylons

Biodiversity
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Jobs

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Solutions

that generate local jobs and build social ca

Water
Cycles

Urban and
Seawater
Agriculture

Wescap is the Catalyst

Designed with a Multiplier Effect

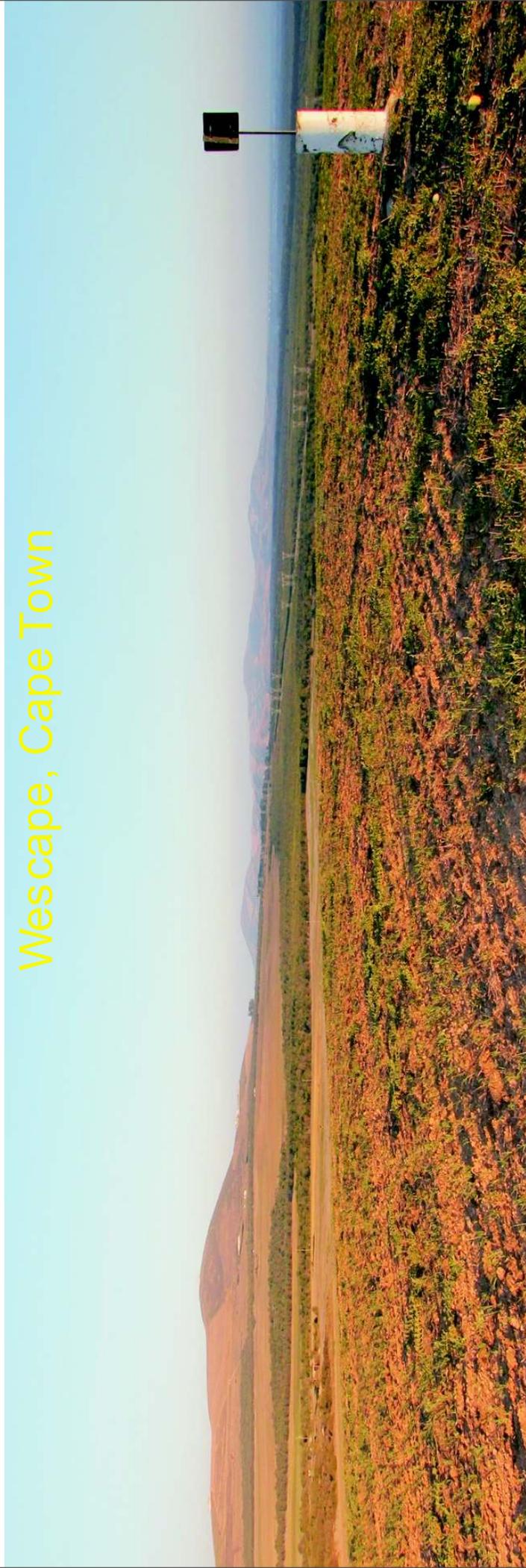
Electric Bus
Feeder System

Vertical Turbine
inside Pylons

Healthy Food

Biodiversity
Corridors

Wescape, Cape Town



Wescape, Cape Town

Rainwater
catchment

Hydro
Water

Excess
Power



Wescape, Cape Town

Rainwater
catchment

Hydro
Water

Drinking
Water

Excess
Power

Light from
flw



Wescap, Cape Town

Rainwater catchment

Hydro Water

Drinking Water

Excess Power

Light from flw

Wind



Wescap, Cape Town

Rainwater catchment

Hydro Water

Drinking Water

Excess Power

Light from flw

Wind

Electric public transport

Wescap, Cape Town



Wescape, Cape Town



Wescape, Cape Town



Wescap, Cape Town



Wescap, Cape Town



Wescape, Cape Town



JOB
Direct job generation links Atlantis to the future

HEALTH
Water, food and housing plus preventive medicine

HOUSING
Competitive, healthy while building up social capital

FOOD
90% food security can be attained with 15% land

WATER
Wescape is self-sufficient in water for all purposes

ENERGY
Potential 250MW in and around Wescape

EDUCATION
Schooling for happiness life, responding to needs

CARBON CREDIT
This project qualifies for at least \$250 mio CEF

CASH FLOW
Early, integrated and net accumulated positive c.f.

RECOVERY of TOP SOIL
nutrients from black and grey water systems

BIODIVERSITY
invasive non-native species converted to food

SOCIAL CAPITAL
land value increases, education and jobs

ROI
above average long term returns over long term



Each week
a new business model
open source

69 cases already published

September 2012 Blue Economy World Congress in Berlin

www.zeri.org

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HOW CAN I BE THE STRONGEST TREE OF THE WHOLE FOREST?

(english version)



IN MORE THAN 100 LANGUAGES

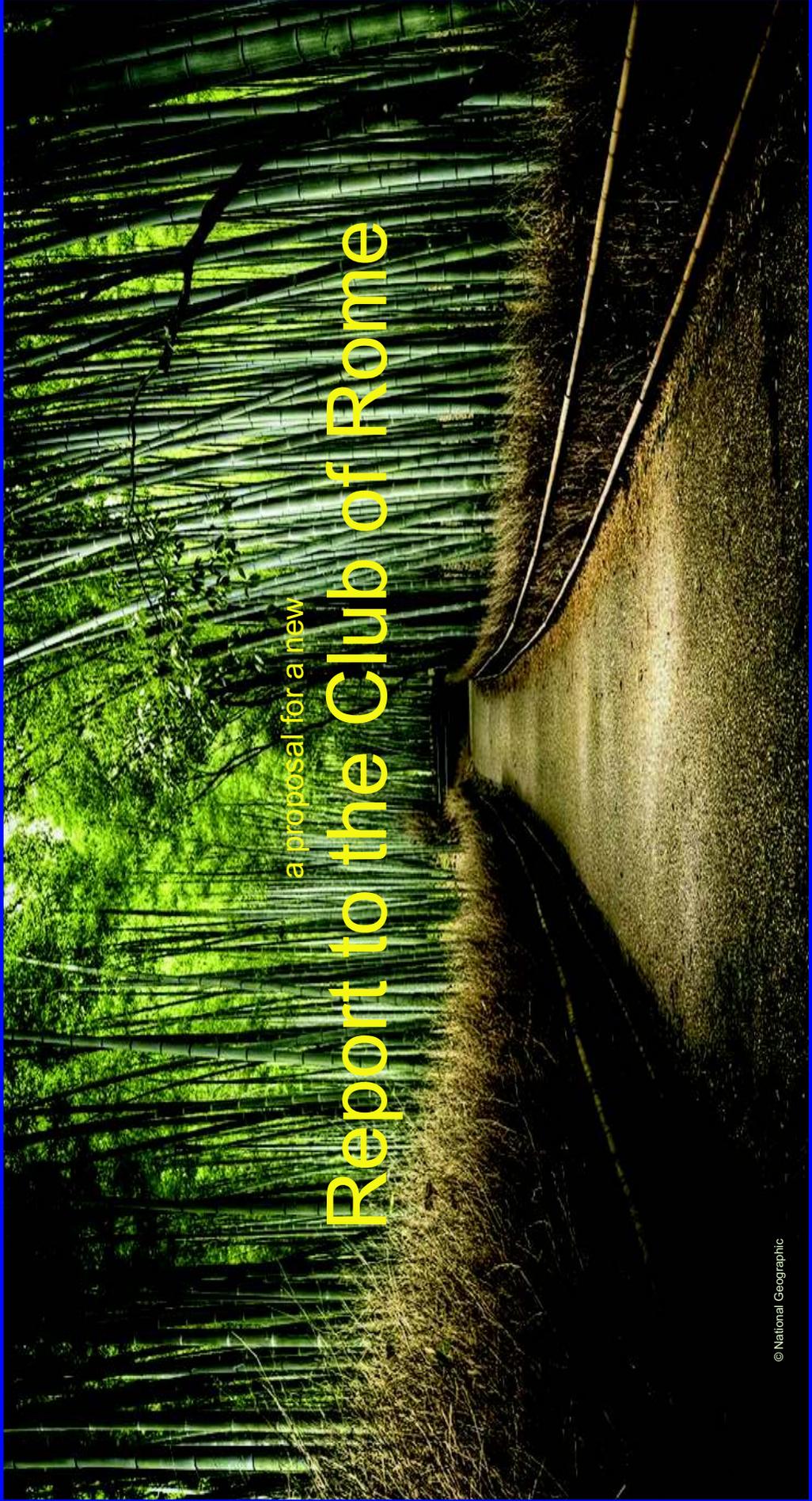


The ZERI story for the whole family!

ZERI

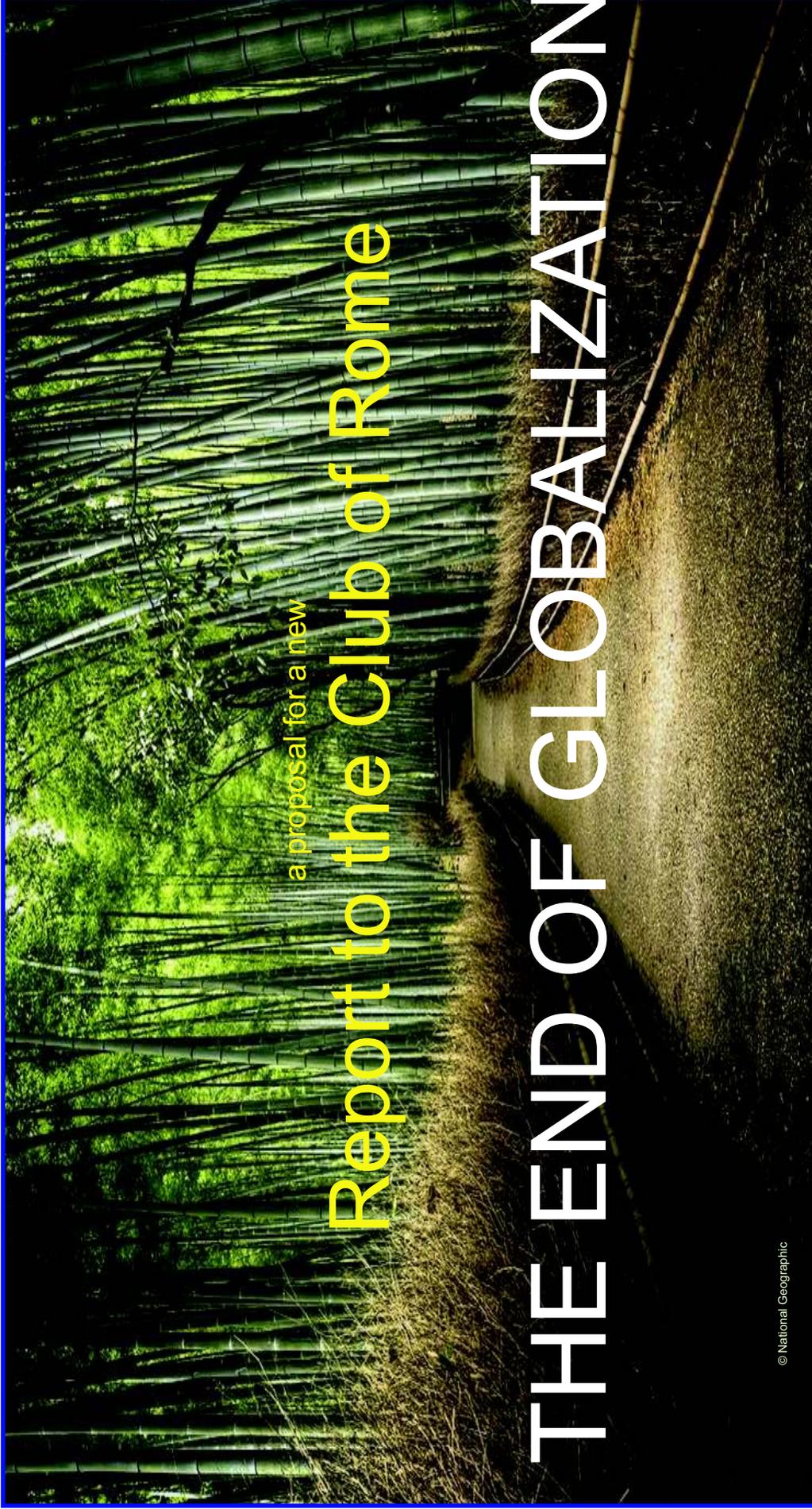
Text by Gunter Pauli
Illustrations by Diana Méndez

R azul AGUA	La Cabra Montañera	La Bruja Del Desierto	Caminando Sobre el Agua	Jarón de Naranjas	Los Bosques Escapan a GuapotaBLE
A verde ALIMENTACION	EL JARDIN de la abuela BISONITE	¡Mamá! La Cafetera	EL HONGO Sabido	¡FROCOS Rojos!	¡Yo Me CoMas Vivo!
I amarillo VIVIENDA	¿Por Qué No Me Quieren?	CULTIVA una Casa	¡Basca Mi espalda!	¡Dónde está Tu Casa?	¡Yo Me Dejes Solo!
N naranja SALUD	EL Rey De Corazones	ANIMALES Doctores	Solo MaChos	Dulce De ARBOR	Salón de Belleza ma HIPOTaMos
E rojo ENERGIA	Los 5 Reinos de la Tierra	Pies FRÍOS	¿Manzanas Voladoras?	CONTRA La CORRIENTE	EL VENTILADOR De La Cebra
O naranja TRABAJO	PeLo Verde o los azules	CHAMPiÑONES Colombianos	Cómo Se PaRan Las Cosas	La HoRMIGA aGRICULTora	EL MaGo ROBERTO
W verde EDUCACION+ETICA	¿Por Qué No Puedo Robar Mienos?	¿Por FaVor JueGa Con Mi Gol!	EL oso Y el Zorro	¿Quién es el Mas Bello?	EL aRBOL Mas Fuerte
					¡Raíces Y oídos Que Ven!



a proposal for a new
Report to the Club of Rome

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THE END OF GLOBALIZATION

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THANK YOU

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