Recap of Regional Scenario and Policy Analysis Workshop on 23 May 2013
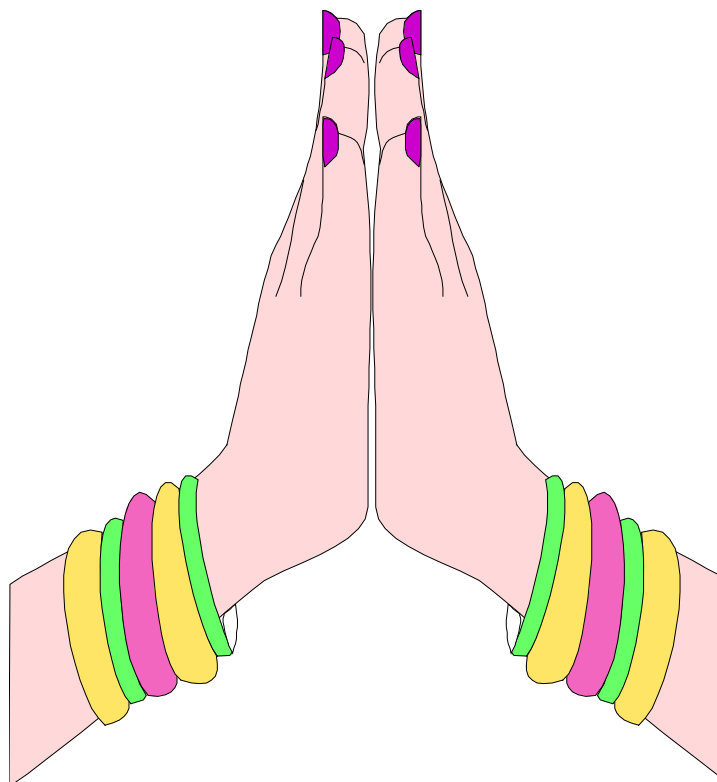
NP
UPADHYAYA
NEPAL
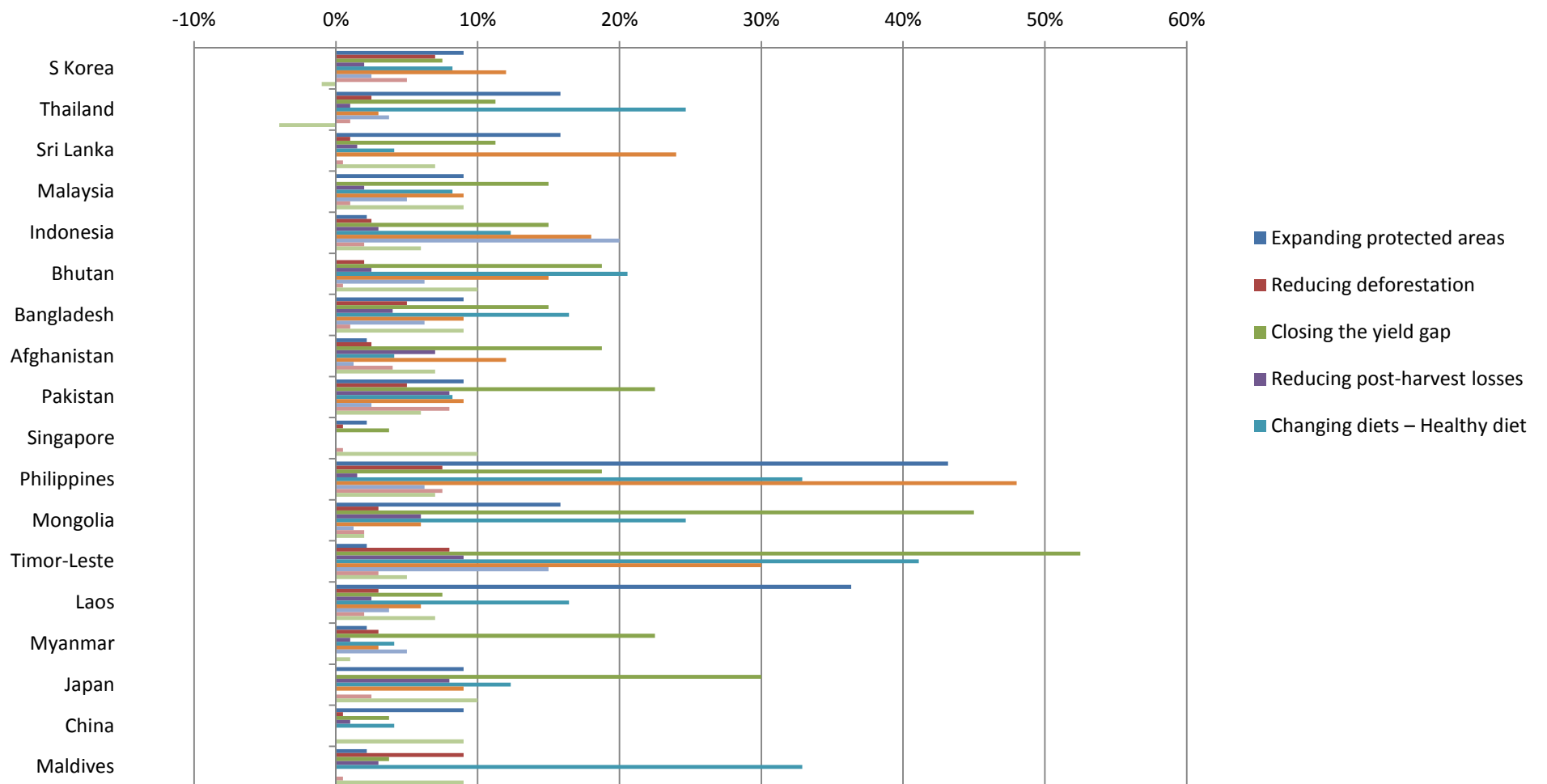
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GOOD MORNING

Summary programme discussed yesterday:

1 → Comparison of chosen ambitions of global policy options

2 → National land use and biodiversity modeling

3 → Working session: analysis of biodiversity impact assessment per country (maps)

4 → Preparation of the PowerPoint to take home

5 → Follow-up training

6 → Preparation of recap and evaluation of regional scenario workshop

Prevented MSA loss, 2000 – 2050.

Change per country estimated by interpolation of global value

Legend:
- Expanding protected areas
- Reducing deforestation
- Closing the yield gap
- Reducing post-harvest losses
- Changing diets – Healthy diet

Countries (top to bottom): S Korea, Thailand, Sri Lanka, Malaysia, Indonesia, Bhutan, Bangladesh, Afghanistan, Pakistan, Singapore, Philippines, Mongolia, Timor-Leste, Laos, Myanmar, Japan, China, Maldives
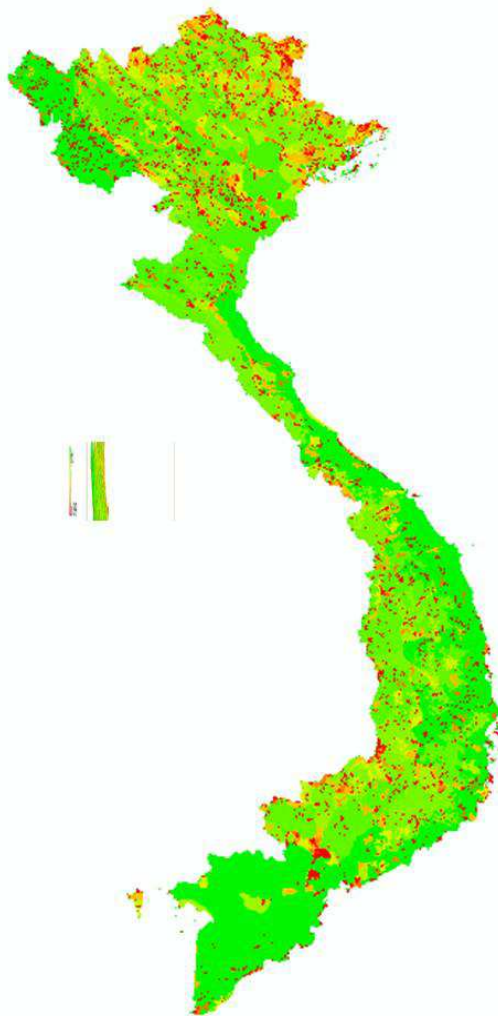
X-axis: -10%, 0%, 10%, 20%, 30%, 40%, 50%, 60%

Global to national: Scale differences

- Global model uses 50*50 km grid cells

- Resolution too coarse for national application
Solution: Use of national input data in combination with high resolution land allocation model

- **Example Vietnam case**
  - Split the model into relative simple parts per pressure type
  - Resolution in GLOBIO set to 1*1 km
  - National land use map with > 43 land classes, biodiversity values per land use class based on local expert knowledge
  - National road map for calculation of impact zones
  - Using **CLUE-s** model to allocate future land use and generate future land use maps
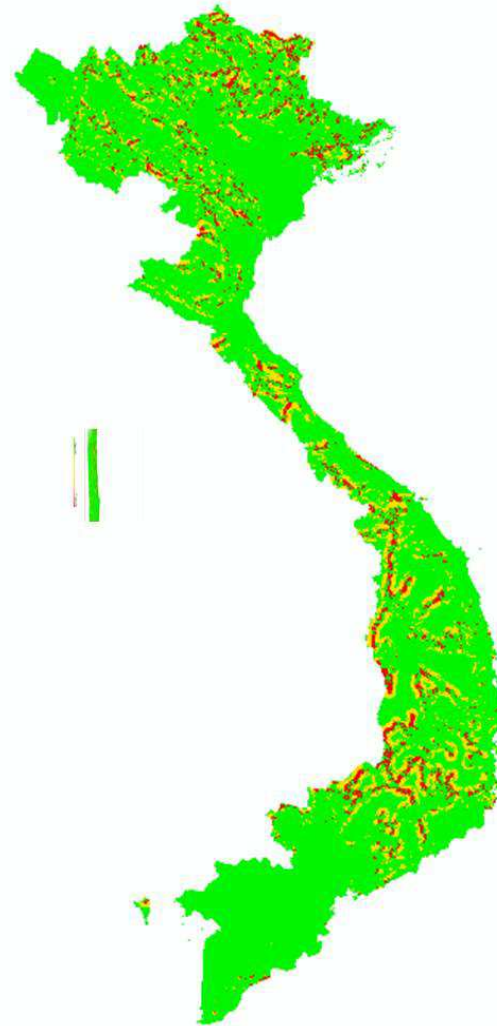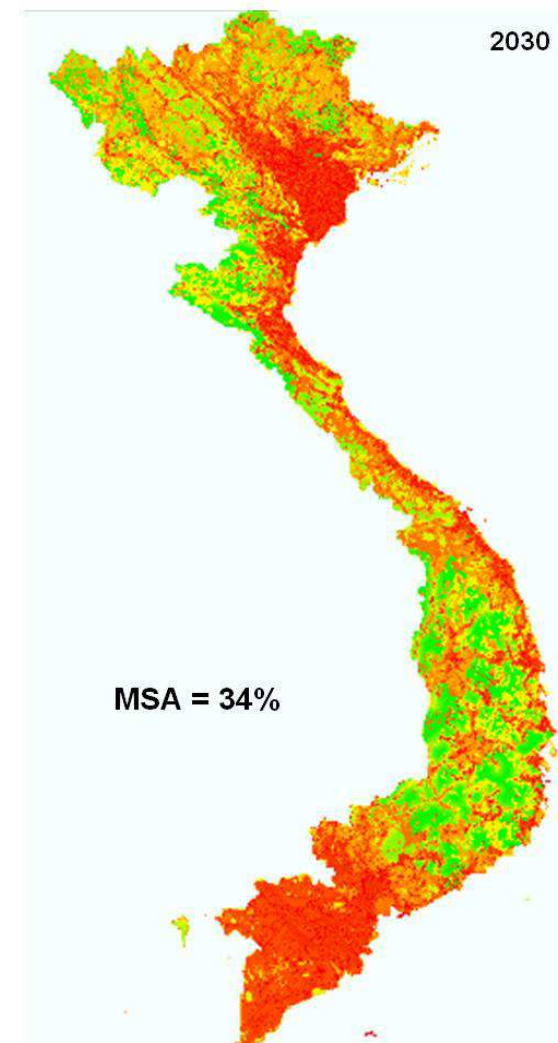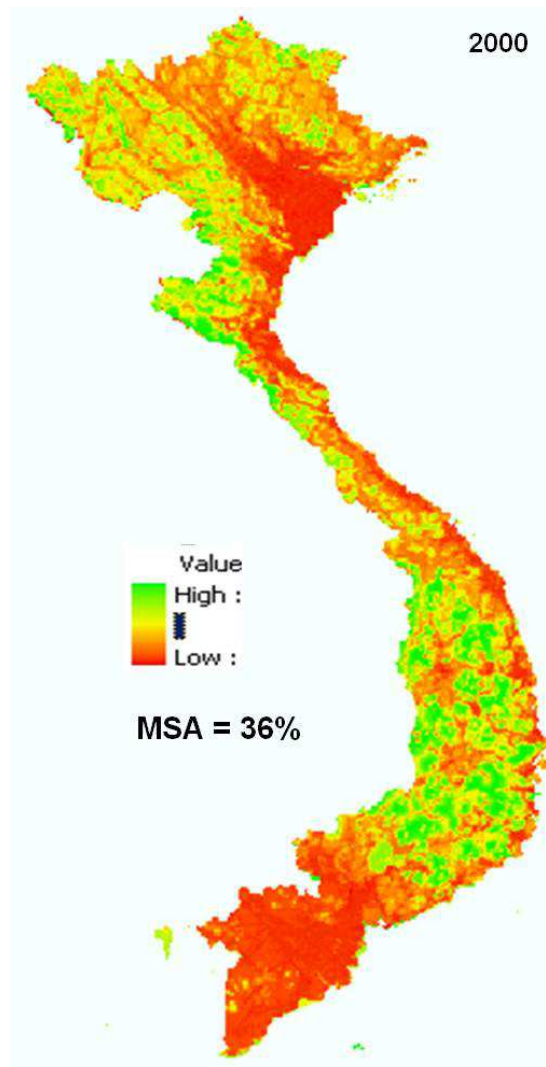
MSA loss caused by land use change
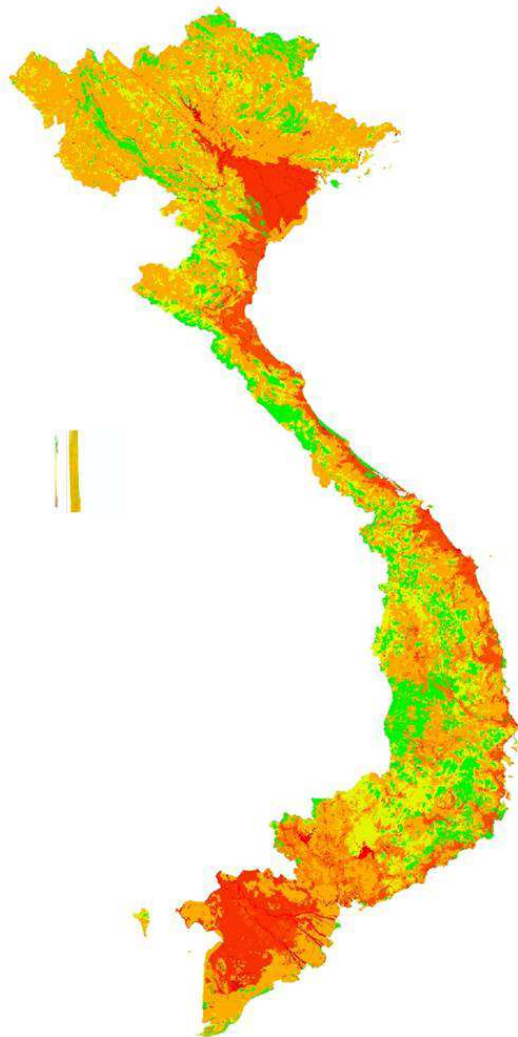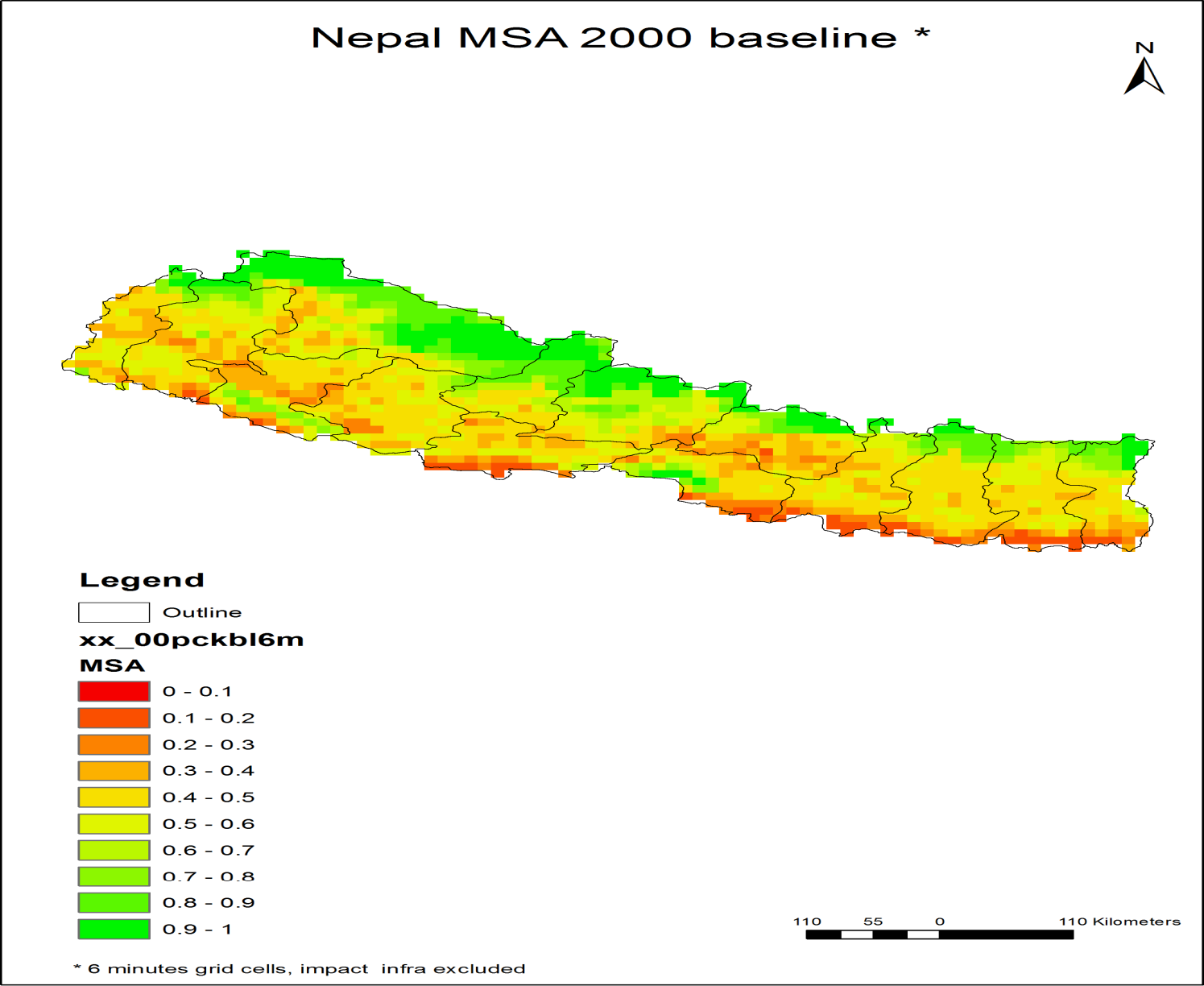
MSA loss caused by infrastructure

MSA loss caused by fragmentation

MSA trend Vietnam

2000

2030

Value
High :
Low :

MSA = 36%

MSA = 34%

In Nepal

Nepal MSA 2000 baseline *

Legend

Outline

xx_00pckbl6m
MSA

- 0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1

110 55 0 110 Kilometers

* 6 minutes grid cells, impact infra excluded

In Nepal

Nepal MSA 2030 baseline *

Legend

☐ Outline

xx_30pckbl6m

MSA

- ▮ 0 – 0.1
- ▮ 0.1 – 0.2
- ▮ 0.2 – 0.3
- ▮ 0.3 – 0.4
- ▮ 0.4 – 0.5
- ▮ 0.5 – 0.6
- ▮ 0.6 – 0.7
- ▮ 0.7 – 0.8
- ▮ 0.8 – 0.9
- ▮ 0.9 – 1

110   55   0   110 Kilometers

* 6 minutes grid cells, impact infra excluded
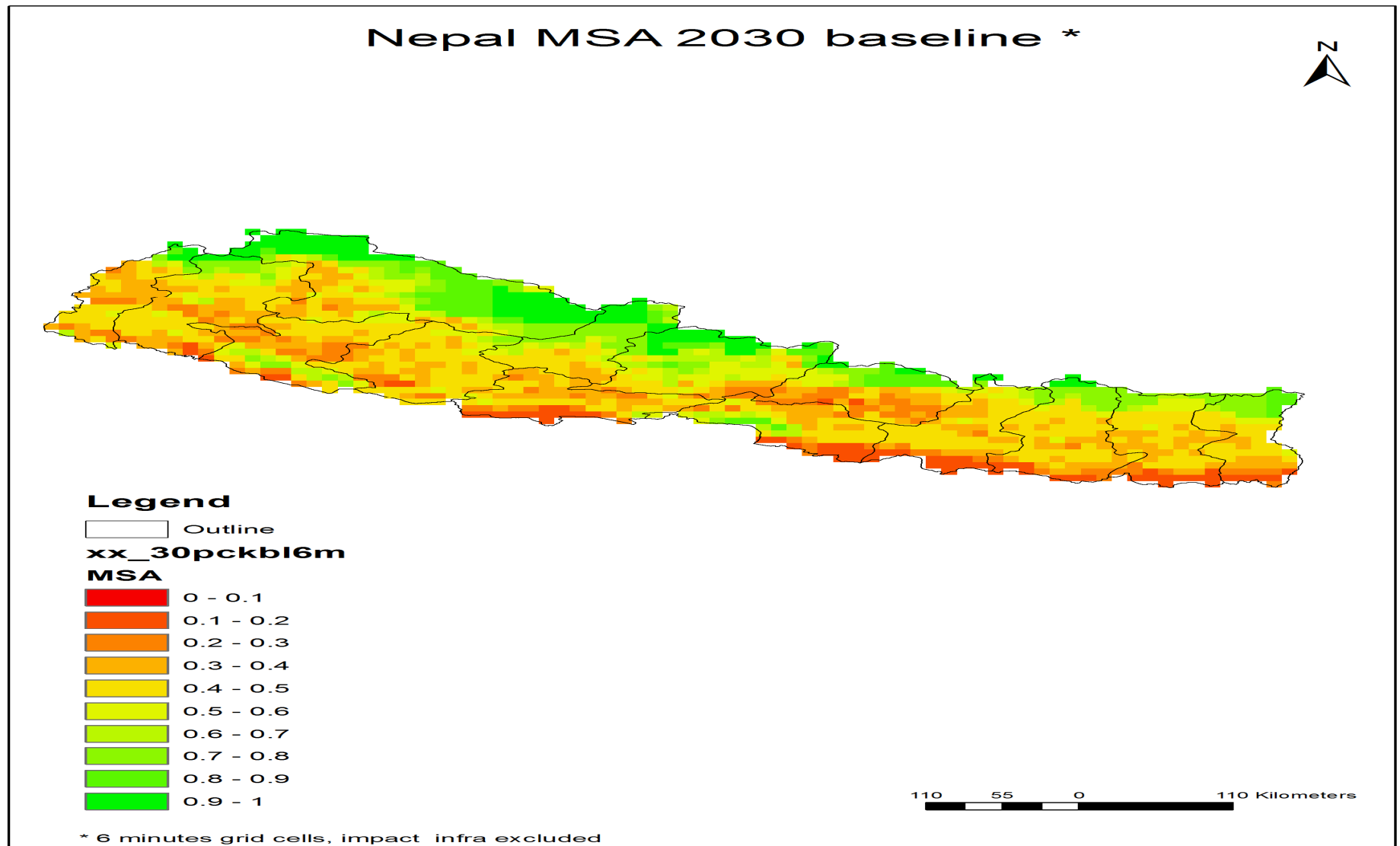
In Nepal

Nepal MSA 2050 baseline *

N
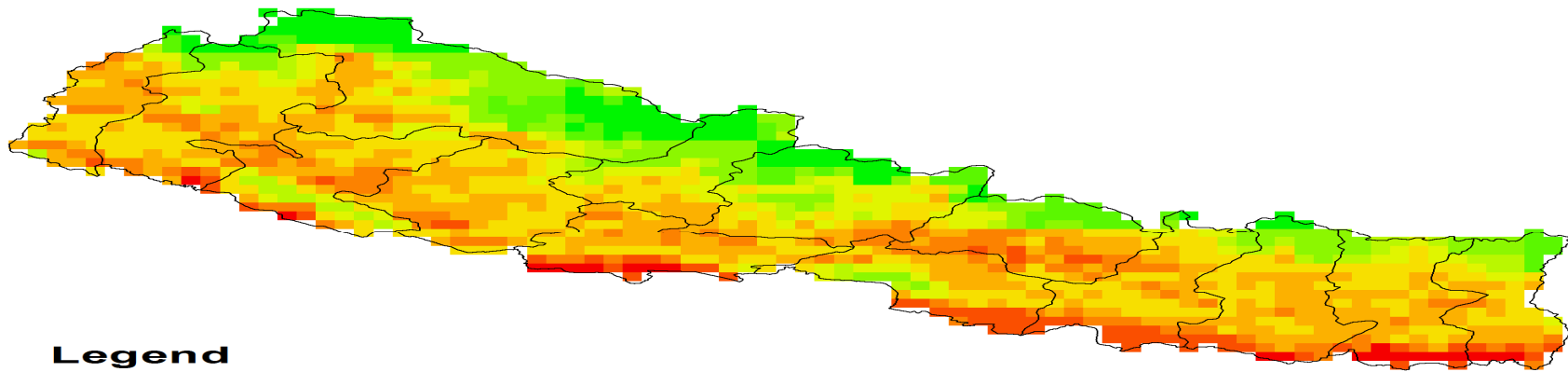
Legend

Outline

xx_50pckbl6m

MSA

- 0 – 0.1
- 0.1 – 0.2
- 0.2 – 0.3
- 0.3 – 0.4
- 0.4 – 0.5
- 0.5 – 0.6
- 0.6 – 0.7
- 0.7 – 0.8
- 0.8 – 0.9
- 0.9 – 1

110   55   0   110 Kilometers

* 6 minutes grid cells, impact infra excluded

On site capacity building

Five suggestions:

1. Introduction for policy makers (1-3 days)
2. Scenario development (3 days)
3. Base training on land use and biodiversity modelling (5 days)
4. Advanced follow up training with own data sets (5 days)
5. Tailor made assessment (± 10 days)

1. Introduction course for policy makers

- ## Target group:
  Higher level officials and professionals working at organizations that are involved with environmental policy formulation or monitoring.

- ## The result:
  Get acquinted with innovative decision support tools for assessing the impact of socio-economic developments on land use and ecosystem quality. Get familiar with methodology, scenario component, limitations and possibilities for policy support

- ## The process:
  Local venue organized by the department. Plansup Consult will provide the training consisting of presentations and interactive working sessions, aided by specially developed training materials and tools.

2. Scenario development workshop (3 days)

- ## Target group:
  Higher level officials and professionals working with environmental planning from different sectorial organizations

- ## The result:
  Integration and quantification of most important developments and factors per sector with respect to land use and biodiversity change. Acquaintance with the calculation of land use demand figures per policy alternative.

The process:
Local venue organized by the department. Plansup Consult will guide multi-disciplinary working sessions on scenario development and policy option formulation. Special focus on facilitation of stakeholder participation.

3. Base training land use and biodiversity modeling (5 days)

- ## Target group:
  Officials and professionals working with environmental planning

- ## The result:
  A good understanding of the methodology of GLOBIO3 and CLUE models and understanding of the technical calculations used. Able to run both models with prepared training data. Skills to analyze and communicate model output results

- ## The process:
  Local venue organized by the department. Plansup Consult will provide the training including modeling tools (GLOBIO3 and CLUE) and manuals, training materials with interactive working sessions and learning tools. Working session on scenario development and quantification of policy options. Calculation of current and future land use and biodiversity based on prepared GIS training data

4. Follow up training land use and biodiversity modeling with own data set (5-10 days)

- ## Target group:

  Officials and professionals working with environmental planning

- ## The result:

  Experts of GLOBIO3 and CLUE models and able to carry out all technical calculations used by themselves. Able to calibrate and run both models with own data and interpret results. Use expert knowledge to improve results. Skills to integrate modeling with policies and train colleagues in modeling.

- ## The process:

  Local venue organized by the department. Local data will be either collected and prepared by the organization or by Plansup. Plansup will provide the training including modeling tools (GLOBIO3 and CLUE) and manuals, training materials with interactive working sessions and learning tools. Working session on scenario development based on local data and quantification of existing policy options. Calculation of current and future land use and biodiversity based on local GIS data.

5. Tailor made assessment of land use and biodiversity (10-15 days)

- ## Target group:
  Governments, Environmental planning organizations, NGO's

- ## The result:
  Assessment of current and future land use and biodiversity for a country or region. Results in map, graph and tabular format based on use of local data and GLOBIO3 and CLUE model runs. Analysis of results for given scenario and policy options.

- ## The process:
  Assessment carried out by Plansup based on local data sets. Local data will be either collected and prepared by the organization or by Plansup. Adjustment of local land use biodiversity values and quantification of existing policy options in collaboration with local organizations. Plansup calibrates and runs models based on the available local data. Results will be calculated and presented per administrative unit and per policy option.

Power point to take home :

How to use models and policy options as tools to support policy decisions.

By Tonnie Tekelenburg

Power point to take home :
Some VVIP Slides.......

The Policy Context

The government wants to be informed about:

- Input for the 5th National Report
  - State and trends of biodiversity at a national scale
  - Effectiveness of current policies
  - Impact of specific sectors
- Ex ante assessment of future impact NBSAPs
  - The possible future impact of socio-economic developments and impact on biodiversity
  - Design and impact of new policies
- Contribute to the GBO4
  - Case study

Power point to take home :
Some VVIP Slides.......

5 ways to use the information of this workshop

1. Promote the use of scenarios and models in order to improve decision making in favor of biodiversity.

2. Provide information on future trends of biodiversity in our country related to their main drivers.

3. Provide a baseline scenario and policy options that have the highest potential to reduce biodiversity loss (NBSAP)

4. Provide indicators of biodiversity that show the trends and impacts of policies on biodiversity

Power point to take home :
Some VVIP Slides.......

Option 1

Promote the use of scenarios and models in border to improve decision making in favour of biodiversity

The use of models and scenarios:

- To have information on both the current and the future situation of biodiversity
- To assess whether existing policies achieve goals on the environment and biodiveristy (ex-post)
- To do an ex-ante assessment about impacts of proposed policy options and thereby define the most effective policies
- To better understand the drivers for biodiveristy loss in your country and to define the policy options that can reverse negative trends

Pressures and policy options
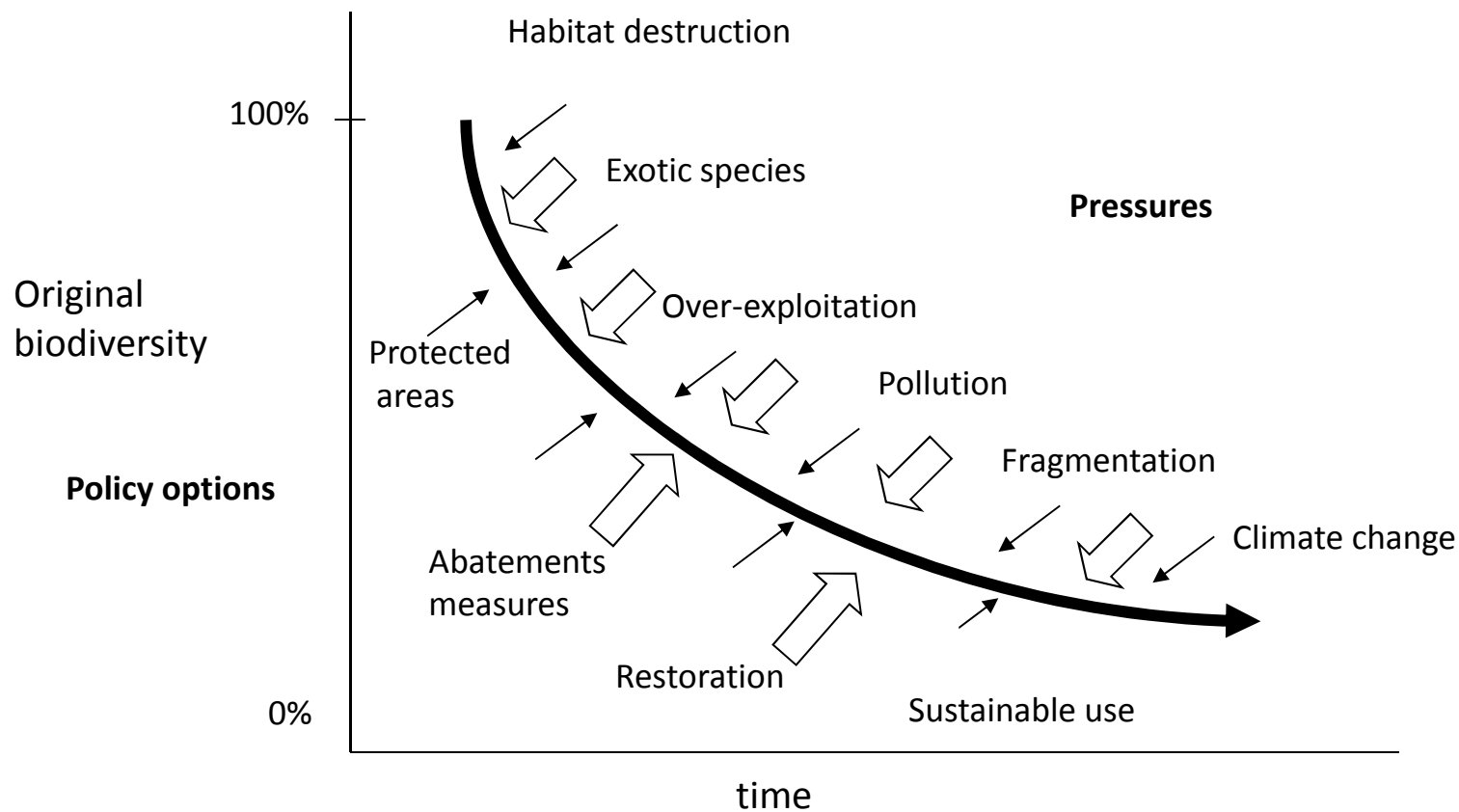
Define policy objectives
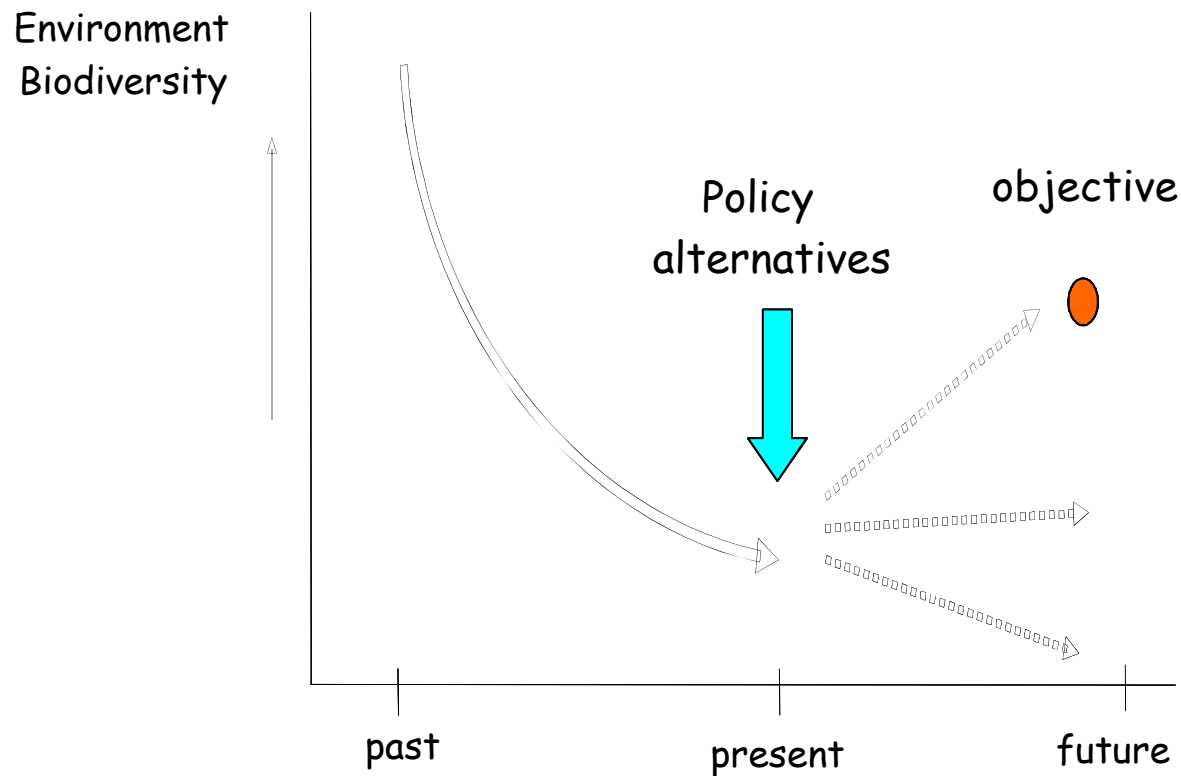
The available models

- The 'easy' excel model
  - To know trends and impacts on biodiversity of scenarios and policy options
  - Land use demand most important pressure
  - No geographical specifications
- CLUE model
  - To know trends and impacts on biodiversity of scenarios and policy options
  - Land use demand most important pressure
  - With geographical specifications
- GLOBIO3 model
  - To know trends and impacts on biodiversity of scenarios and policy options
  - Includes the five different pressures
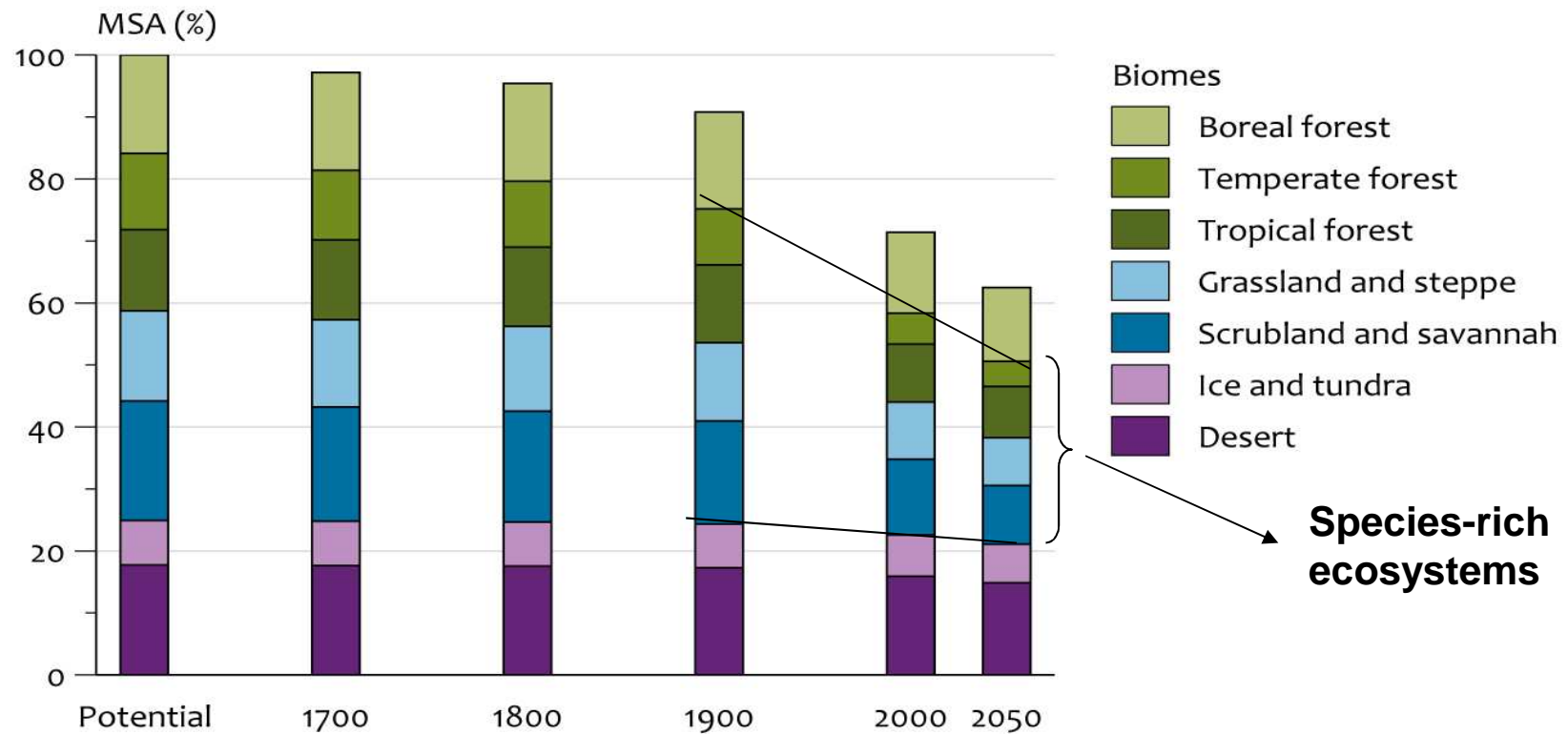
Underlying data for GLOBIO3
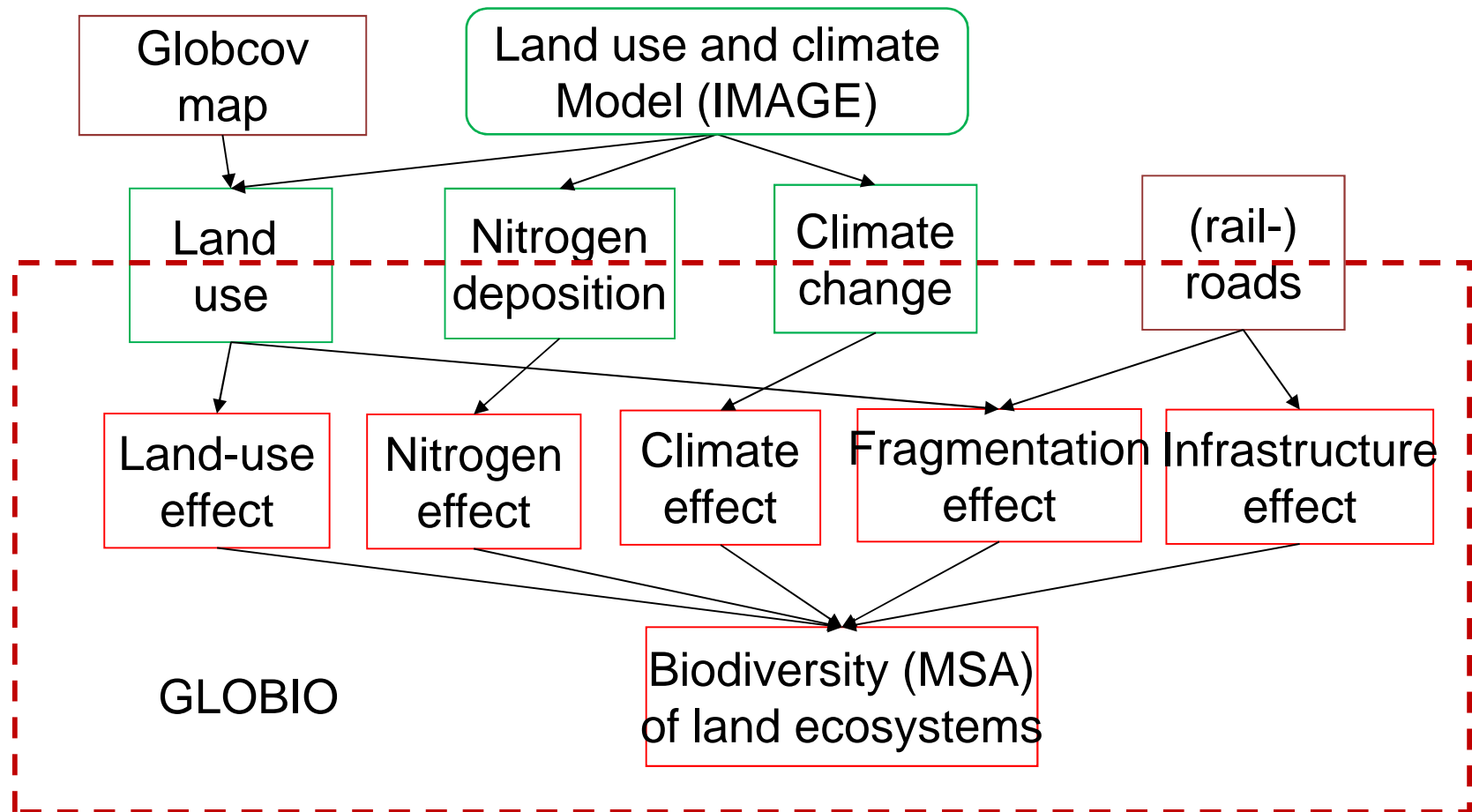
Power point to take home :
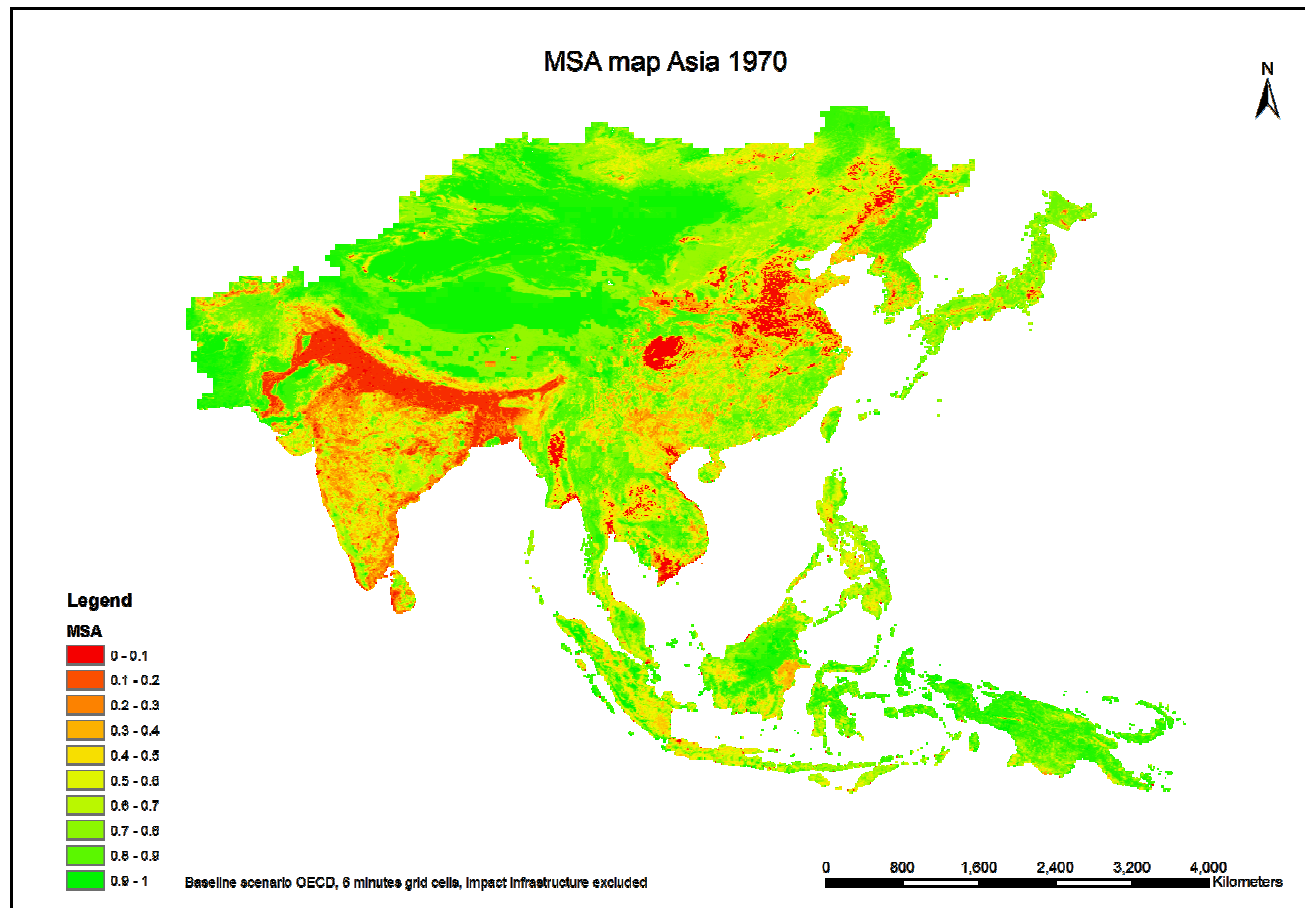**Some VVIP Slides.......**

Option 2

Provide information on future trends of biodiversity in our country related to their main drivers
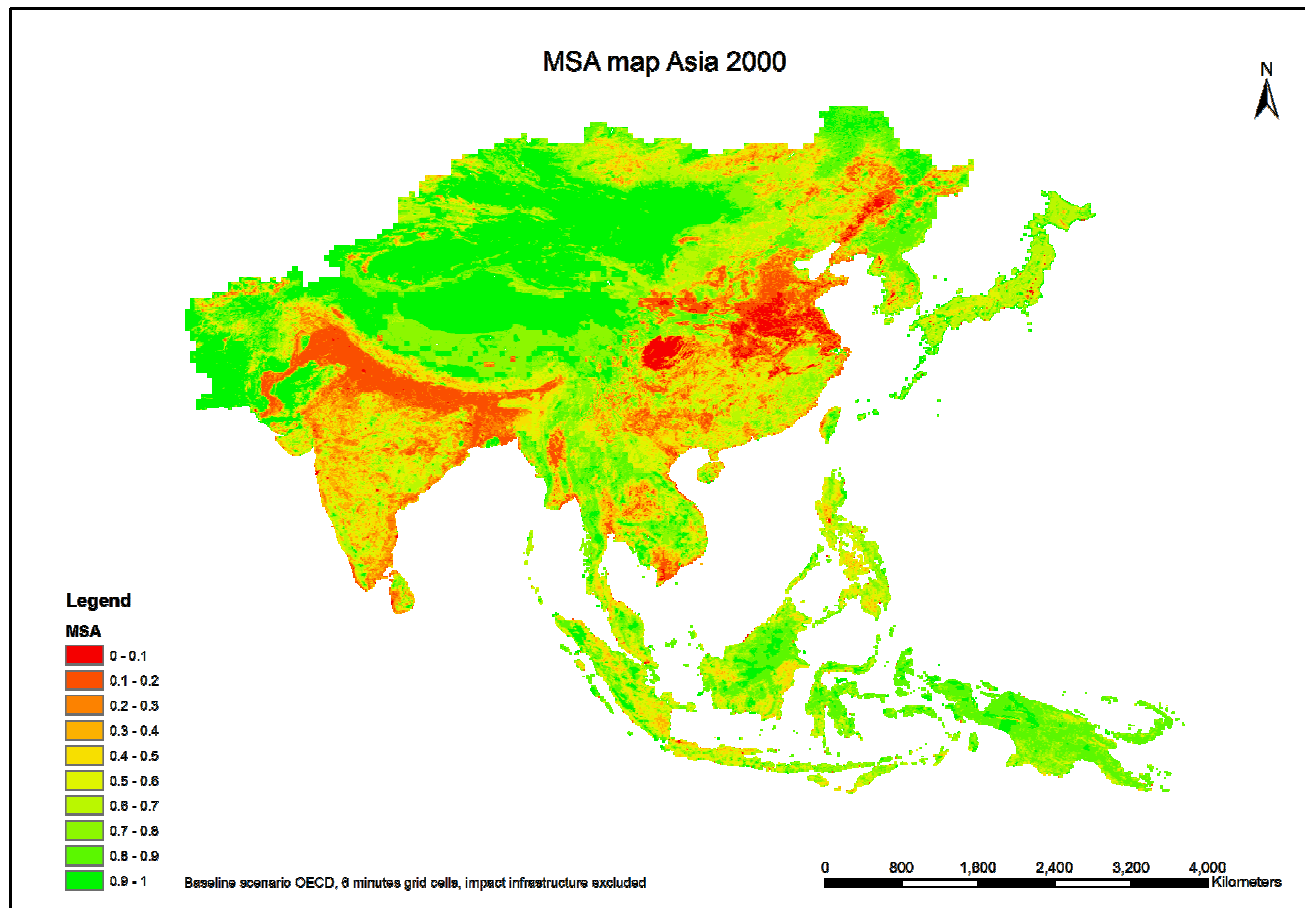
Global baseline scenario: biodiversity loss continues

Global MSA in baseline scenario
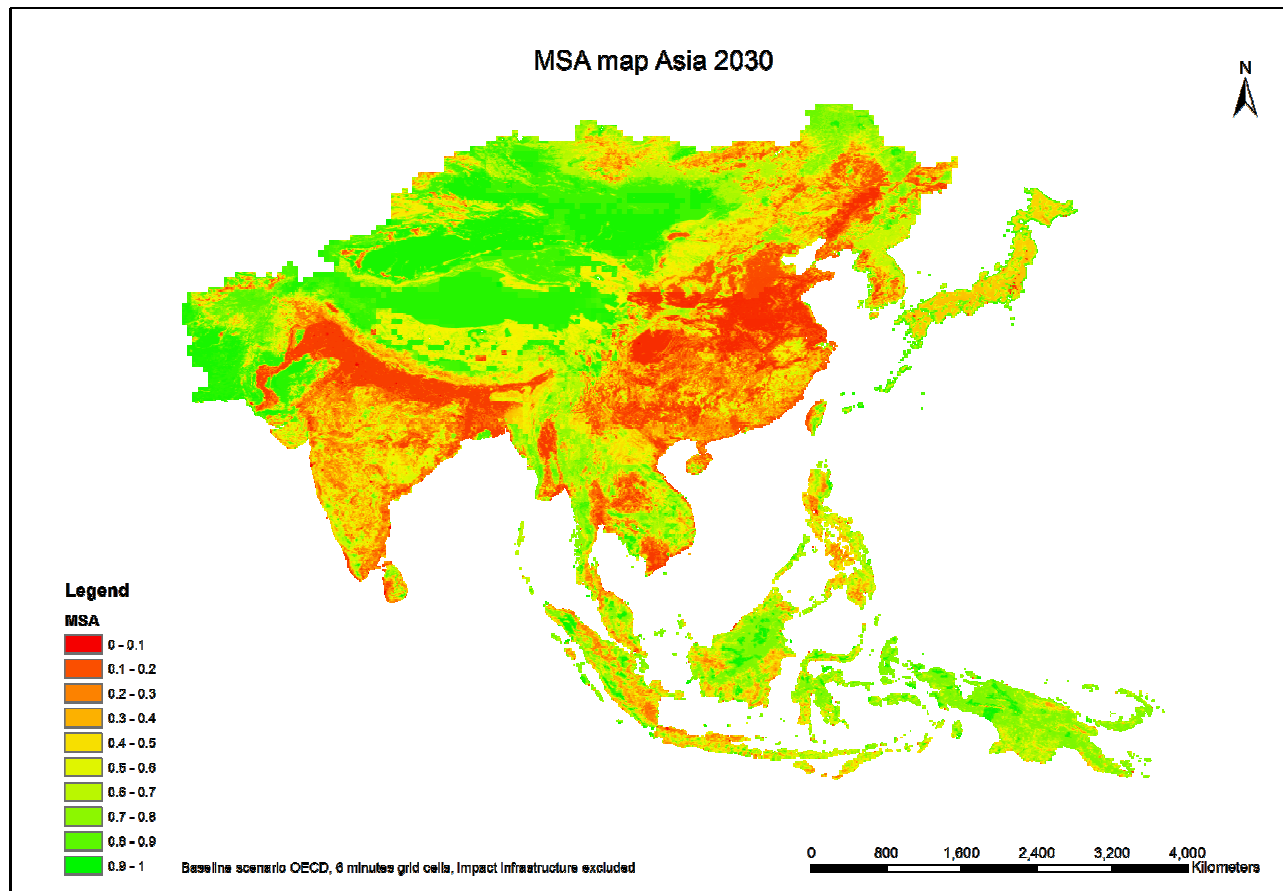
Baseline scenario 1970
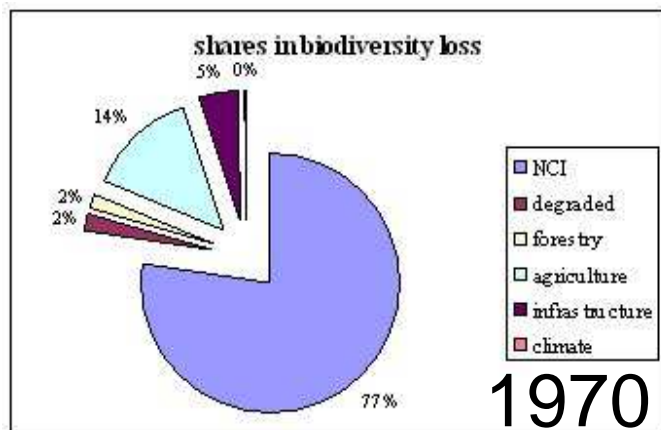

MSA map Asia 1970

N

Legend

MSA
- 0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1

Baseline scenario OECD, 6 minutes grid cells, impact infrastructure excluded

0   800   1,600   2,400   3,200   4,000
Kilometers

Baseline scenario 2000

MSA map Asia 2000

N

Legend

MSA

- 0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1

Baseline scenario OECD, 6 minutes grid cells, impact infrastructure excluded

0   800   1,800   2,400   3,200   4,000
Kilometers

Baseline scenario 2030

MSA map Asia 2030

N

Legend

MSA

- 0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1

Baseline scenario OECD, 6 minutes grid cells, impact infrastructure excluded
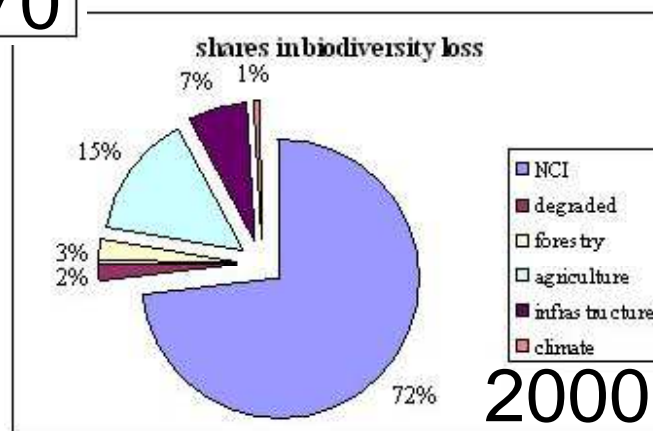
0   800   1,600   2,400   3,200   4,000
Kilometers

Increasing rate of biodiversity loss in 30 years periods
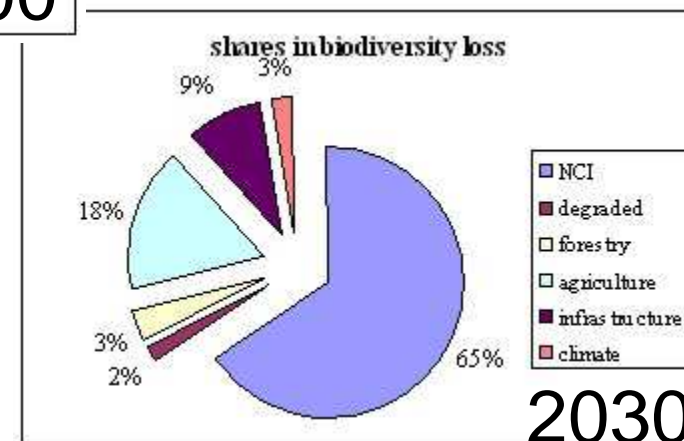
MSA:
Global: 77 -> 72 -> 65%
South-East Asia
70 -> 60 -> 40%

Losses per pressure type
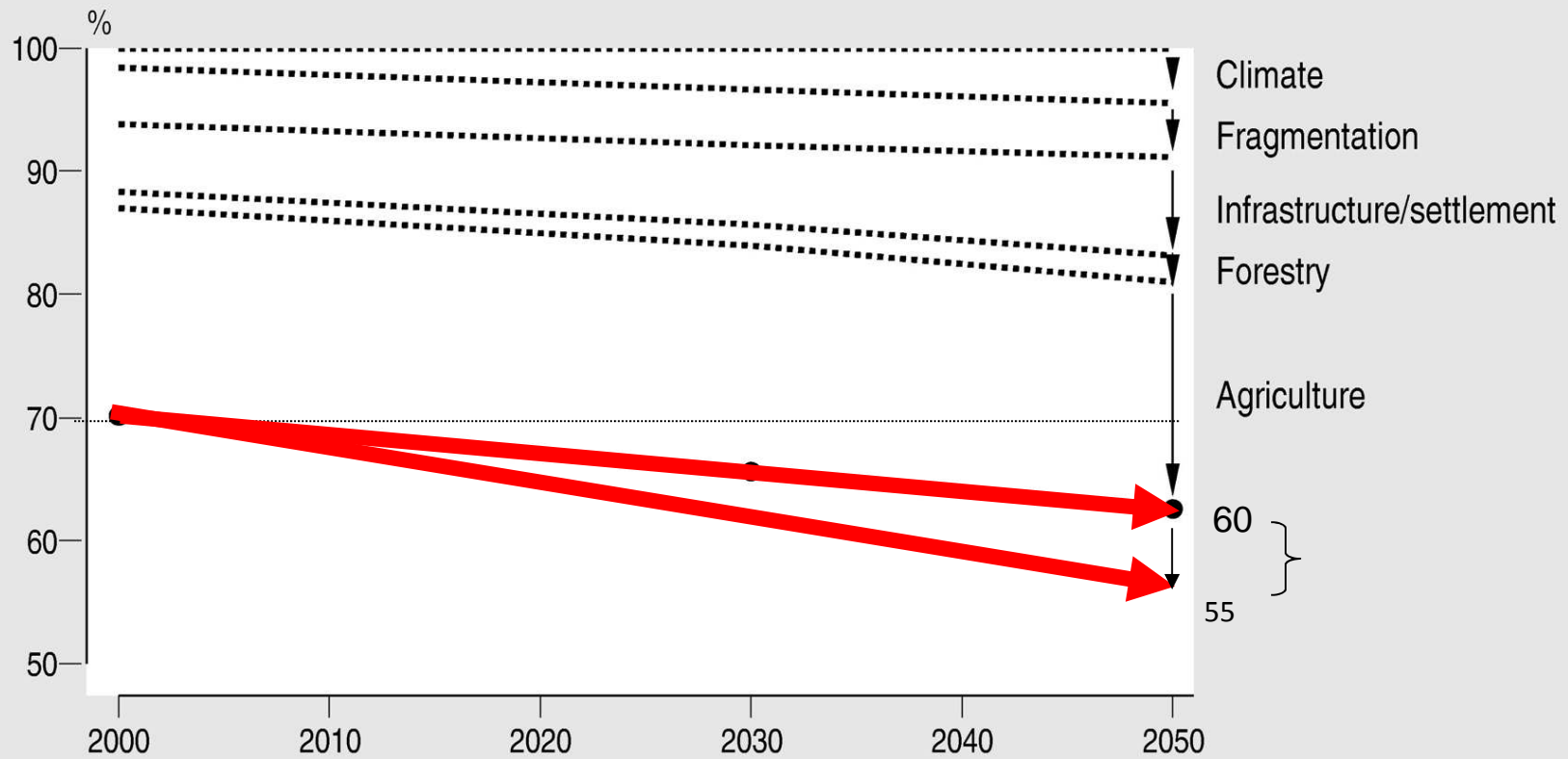
Power point to take home :
Some VVIP Slides.......

Option 3

Provide policy options that have the highest potential to reduce biodiversity loss (NBSAP)

Power point to take home :
Some VVIP Slides.......

Option 4

Determine and specify the most important policy options in our country.

- Reduce the pressure on land use.
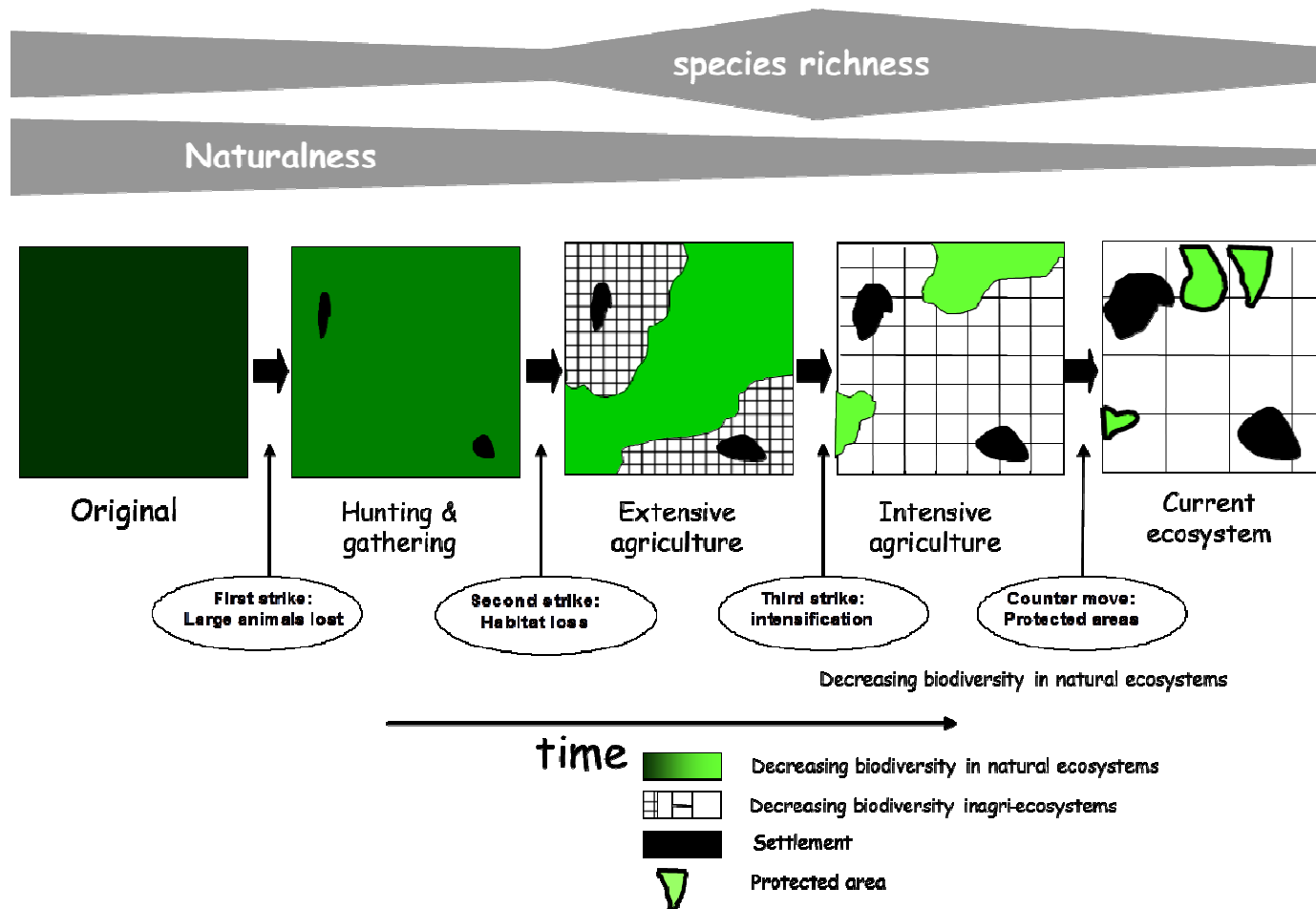- Increase of protected area.
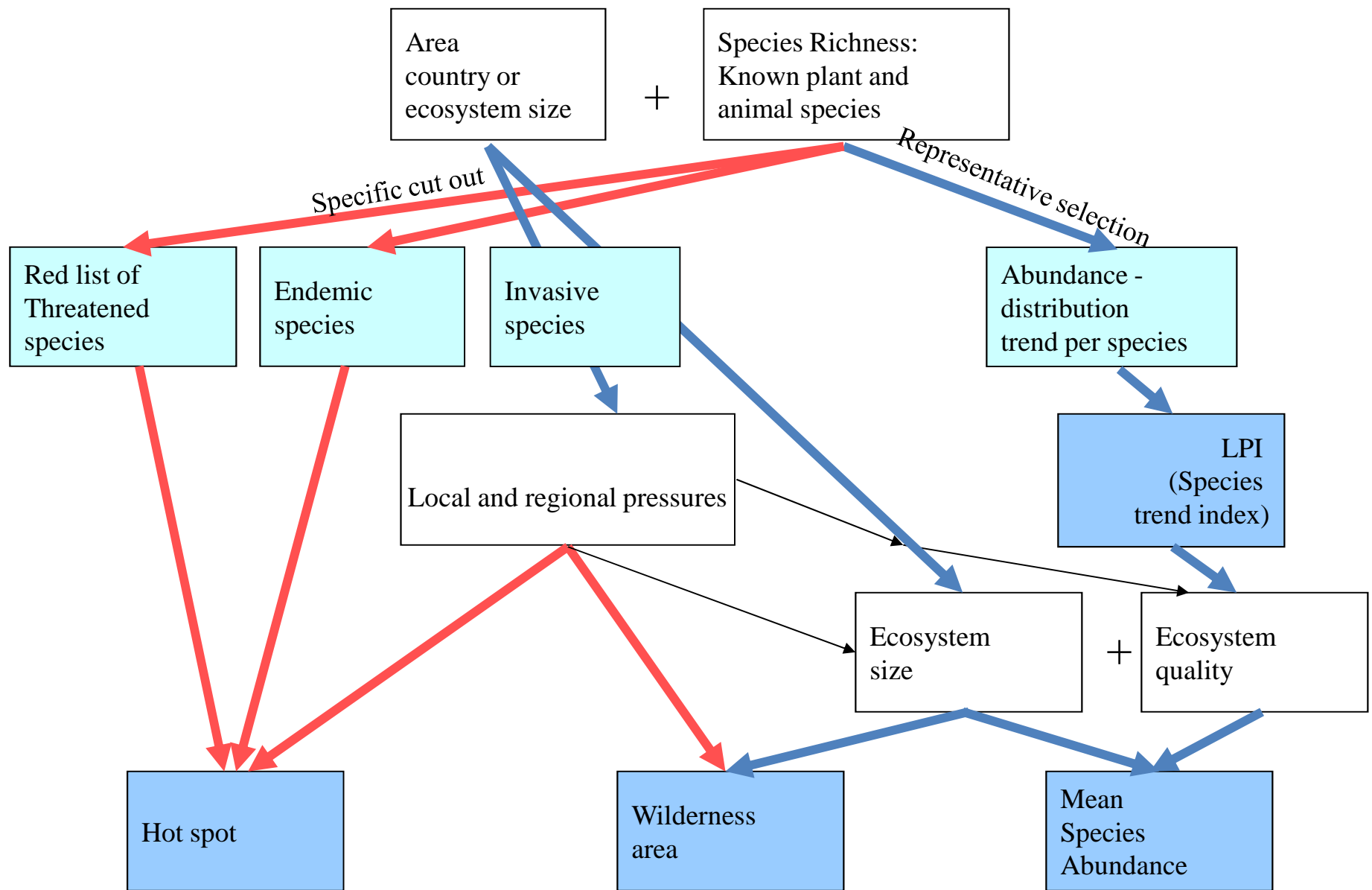- Change diets.

Power point to take home :
Some VVIP Slides.......

Option 5

Provide indicators of biodiversity that show the trends and impacts of policies on biodiversity

Species richness vs. naturalness

The GLOBIO3 biodiversity model

X

Quality * Quantity

- The model uses the MSA indicator

- <u>M</u>ean <u>S</u>pecies <u>A</u>bundance of the species,
 relative to their abundance in primary vegetation:

   Indicates the '**naturalness**' of an area or ecosystem

- Combines ecosystem quality (*species abundance*) and quantity (*extent*)

- ## Model uses cause effect relations based on measured effects of pressures:

  – Comparison between undisturbed and disturbed ecosystems

  – Relative decrease of species abundance and richness at local level

MSA in pictures

Lakes

Forests

100%

Pastures

50%

0%

MSA
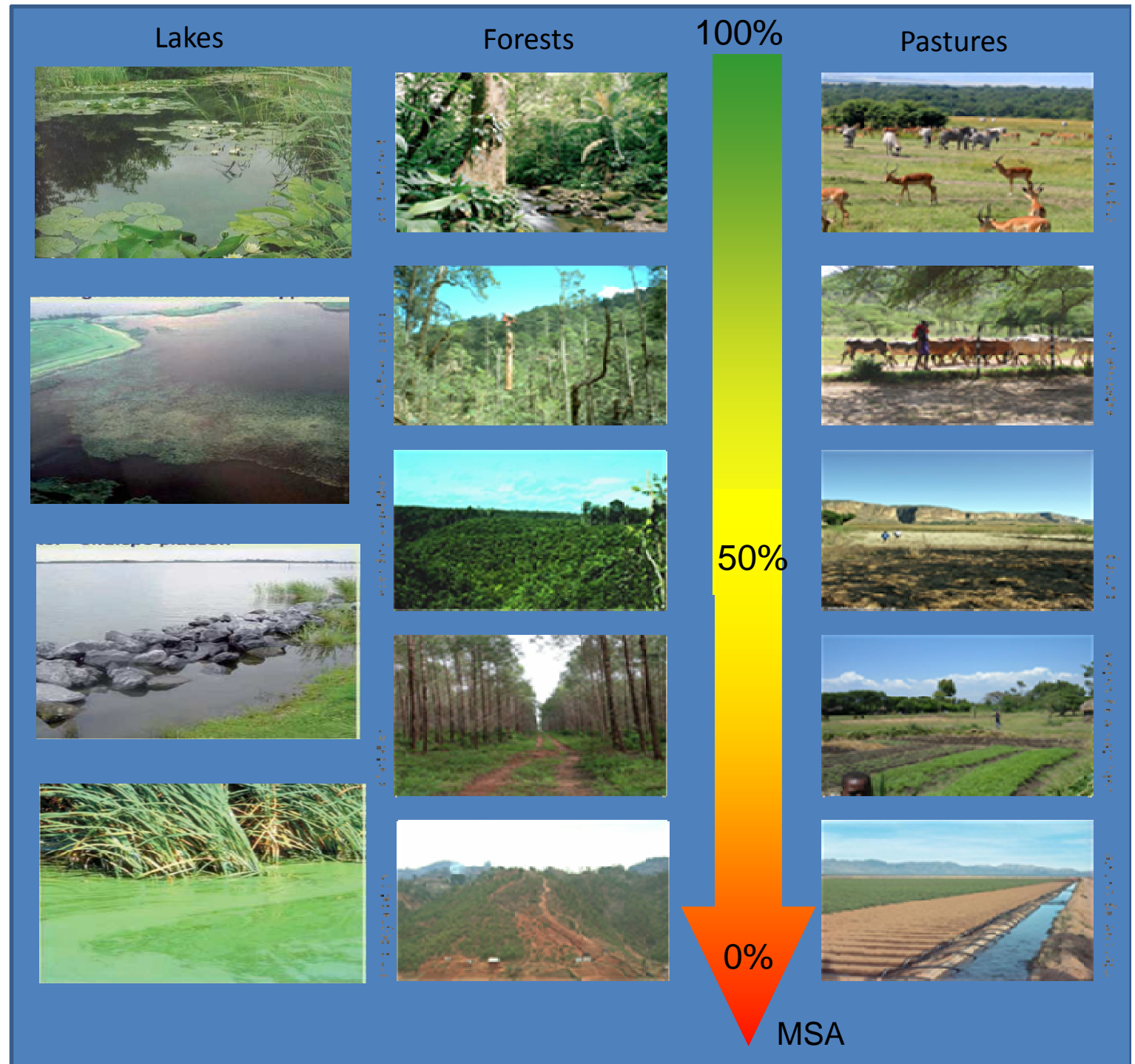
Mean Species Abundance (MSA)
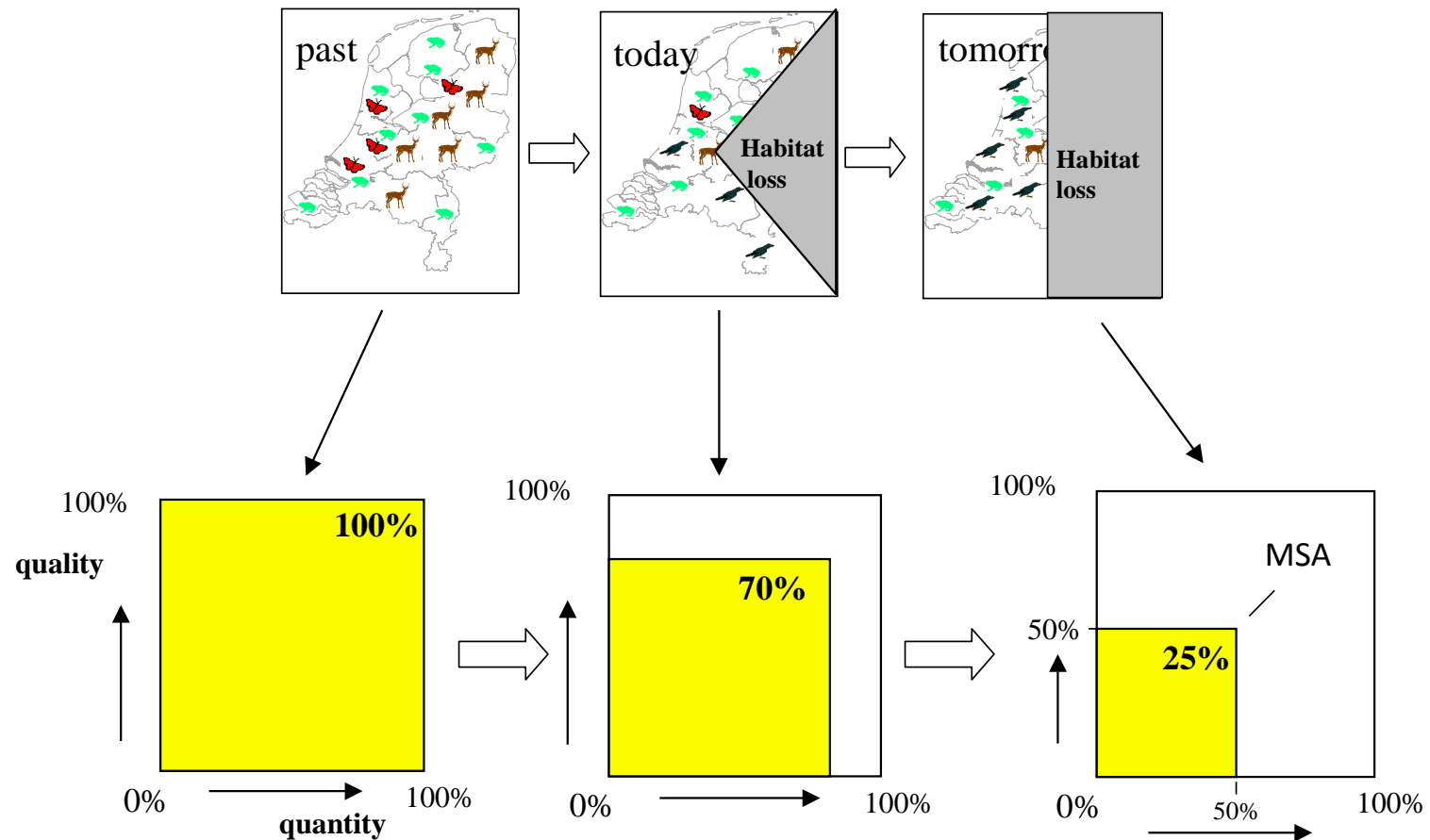
Observations

- Analysis of policy options was learned.
- Global policy options have to be adapted to the national scale.
- Pressures and policy options are closely linked.
- Playing with ambition levels of policy options show insight in the possibilities of reaching the Aichi targets.

THANK YOU

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