

International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

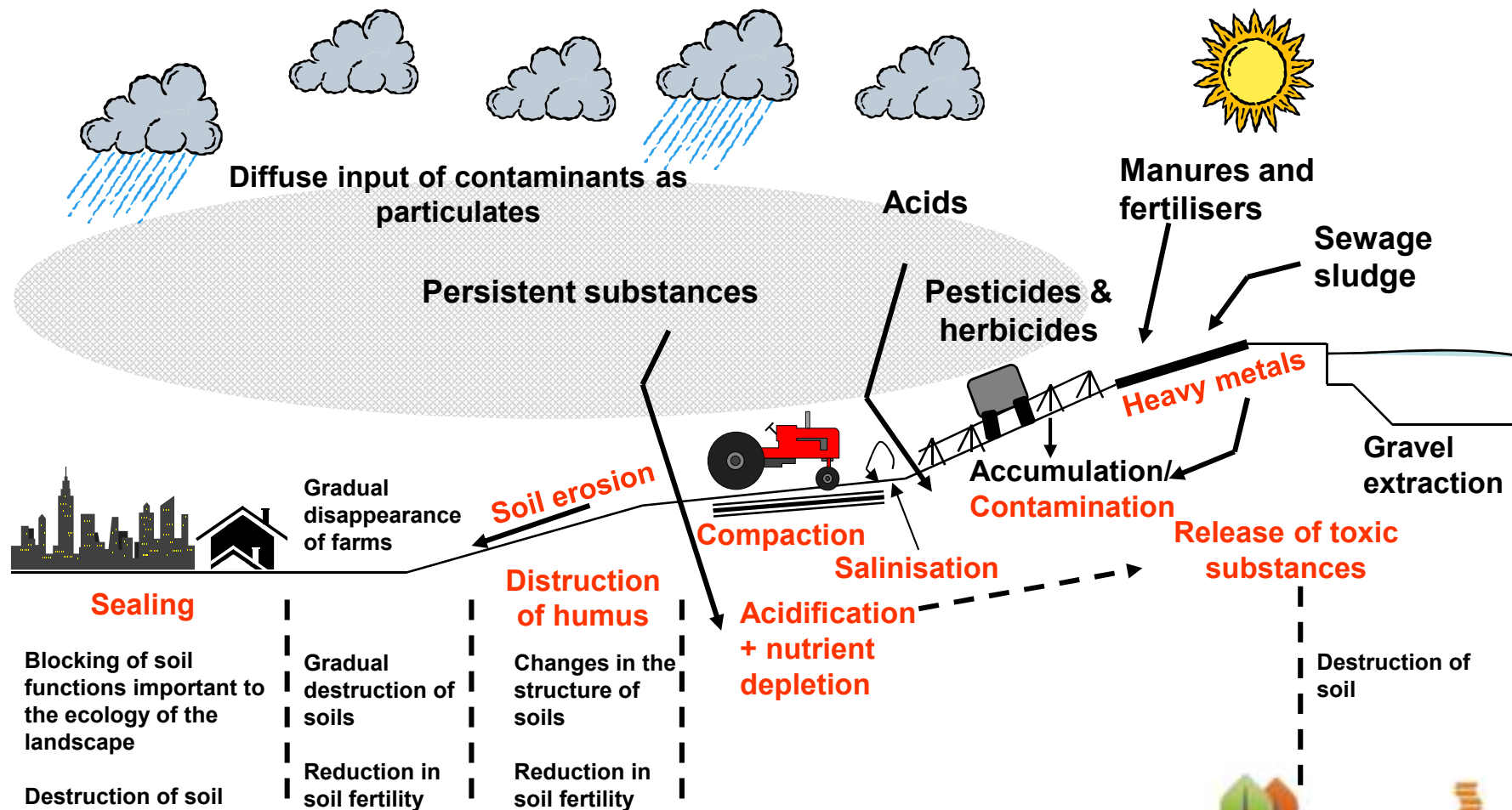
Report from regional cases. Summary for discussion and conclusions

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

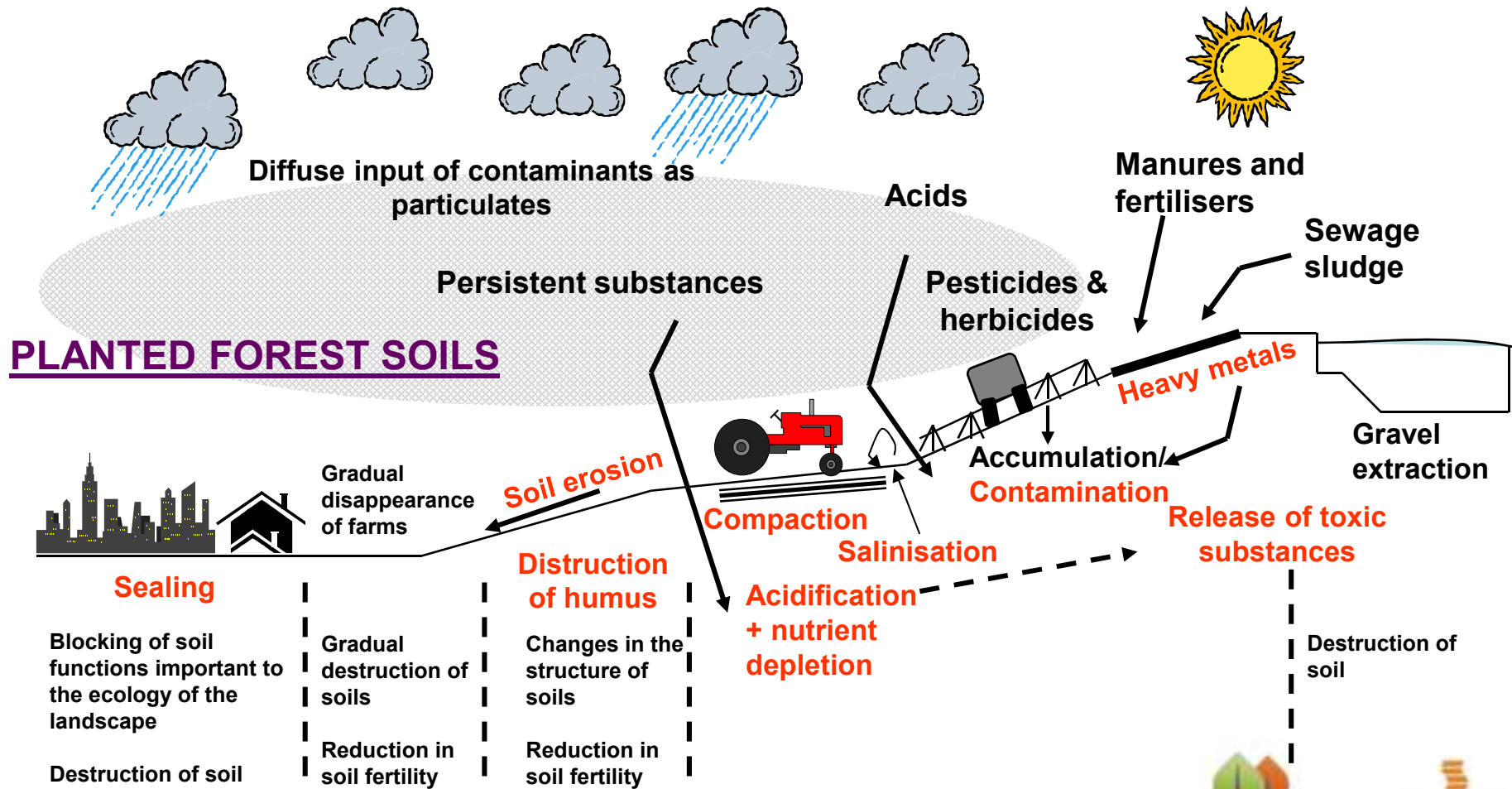


Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

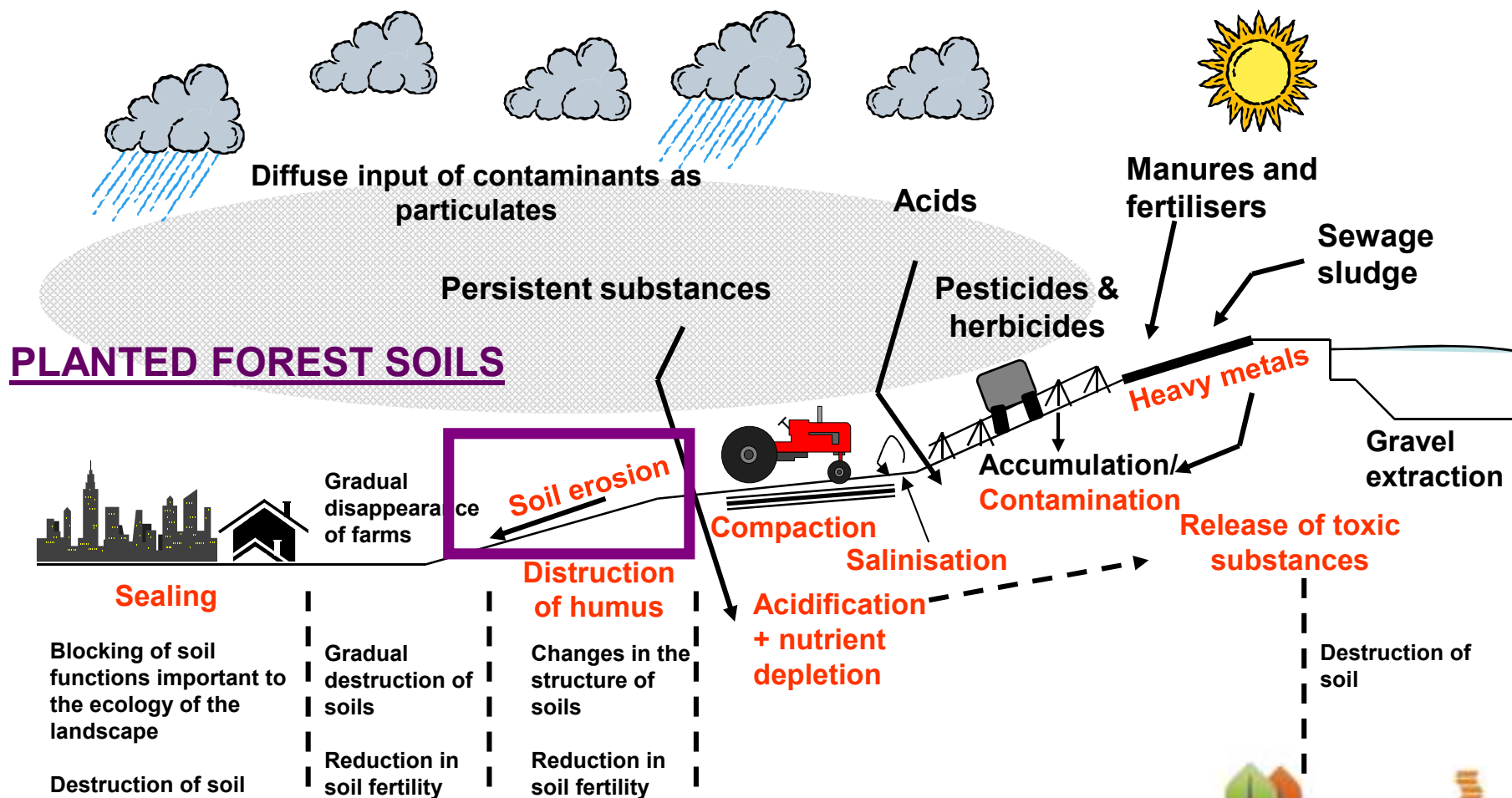


Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

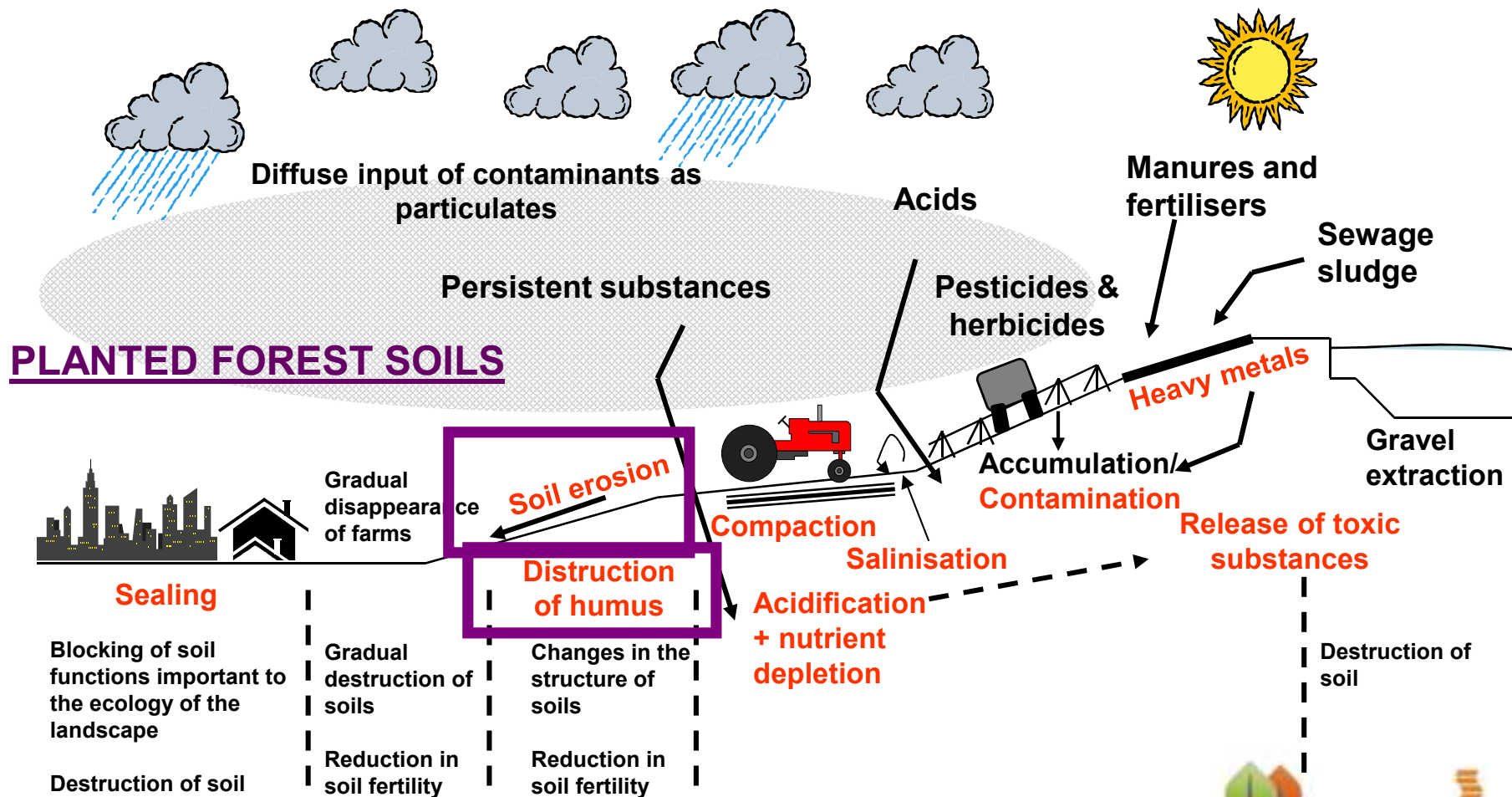


Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

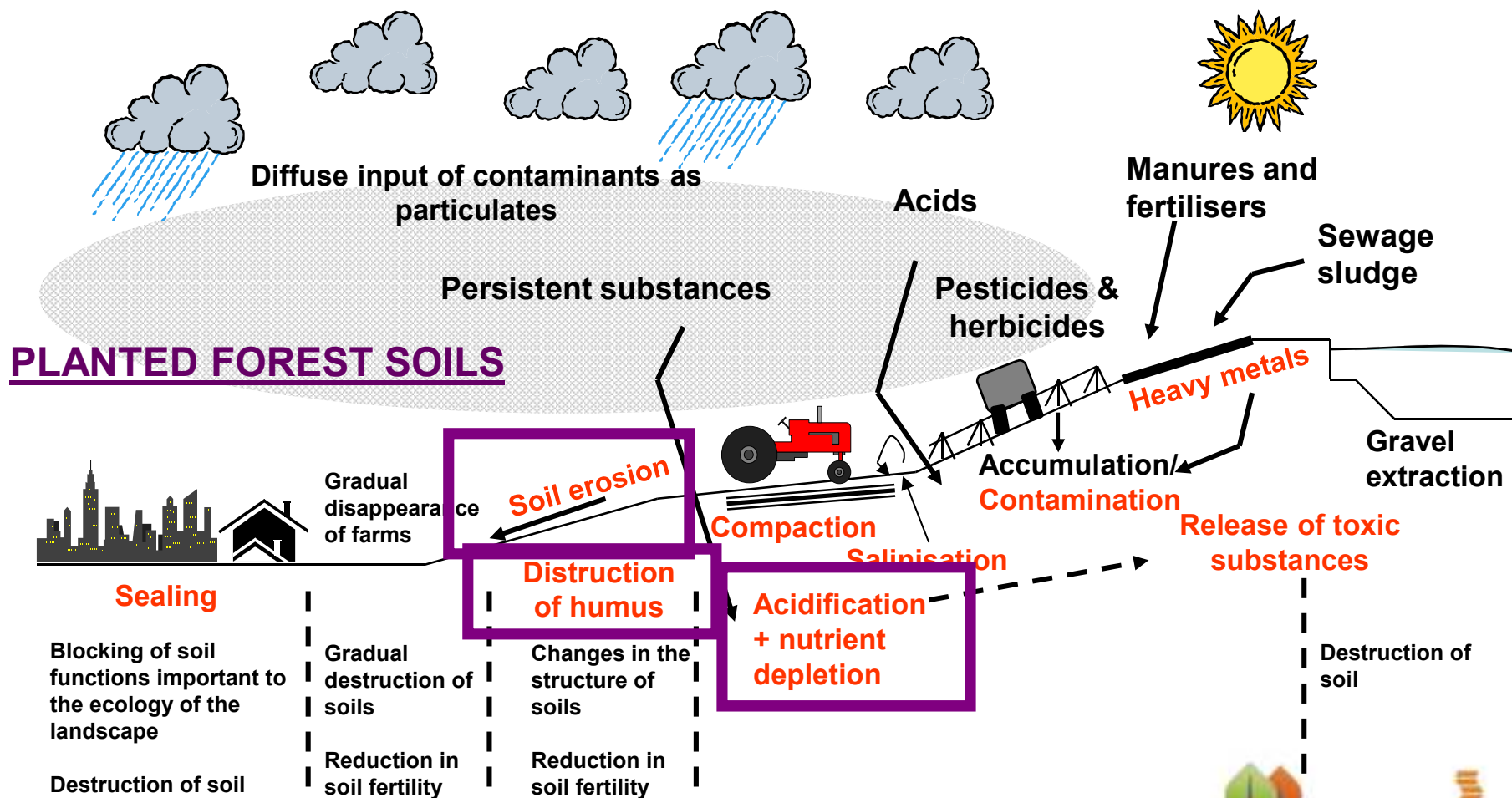


Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

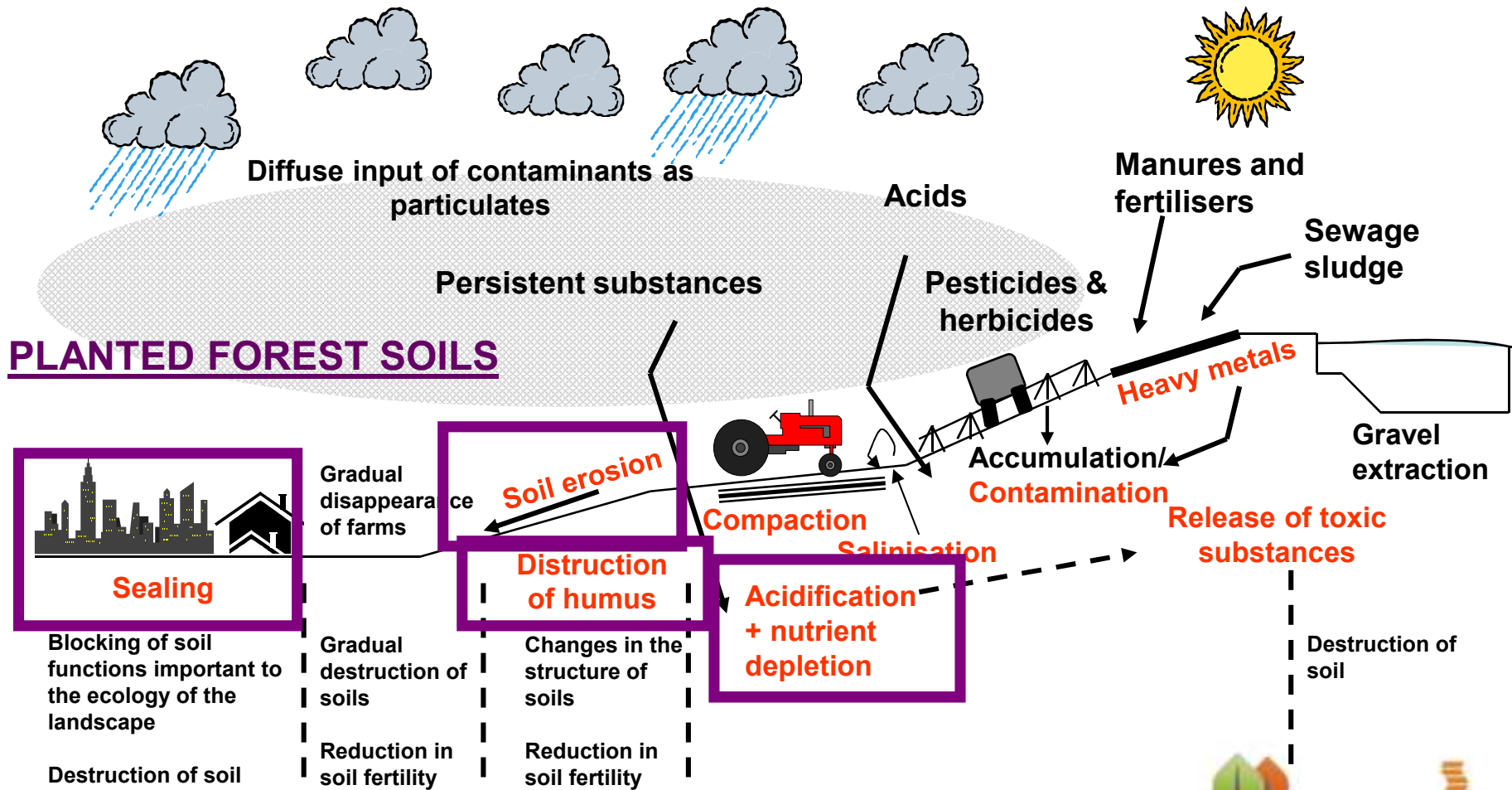


Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

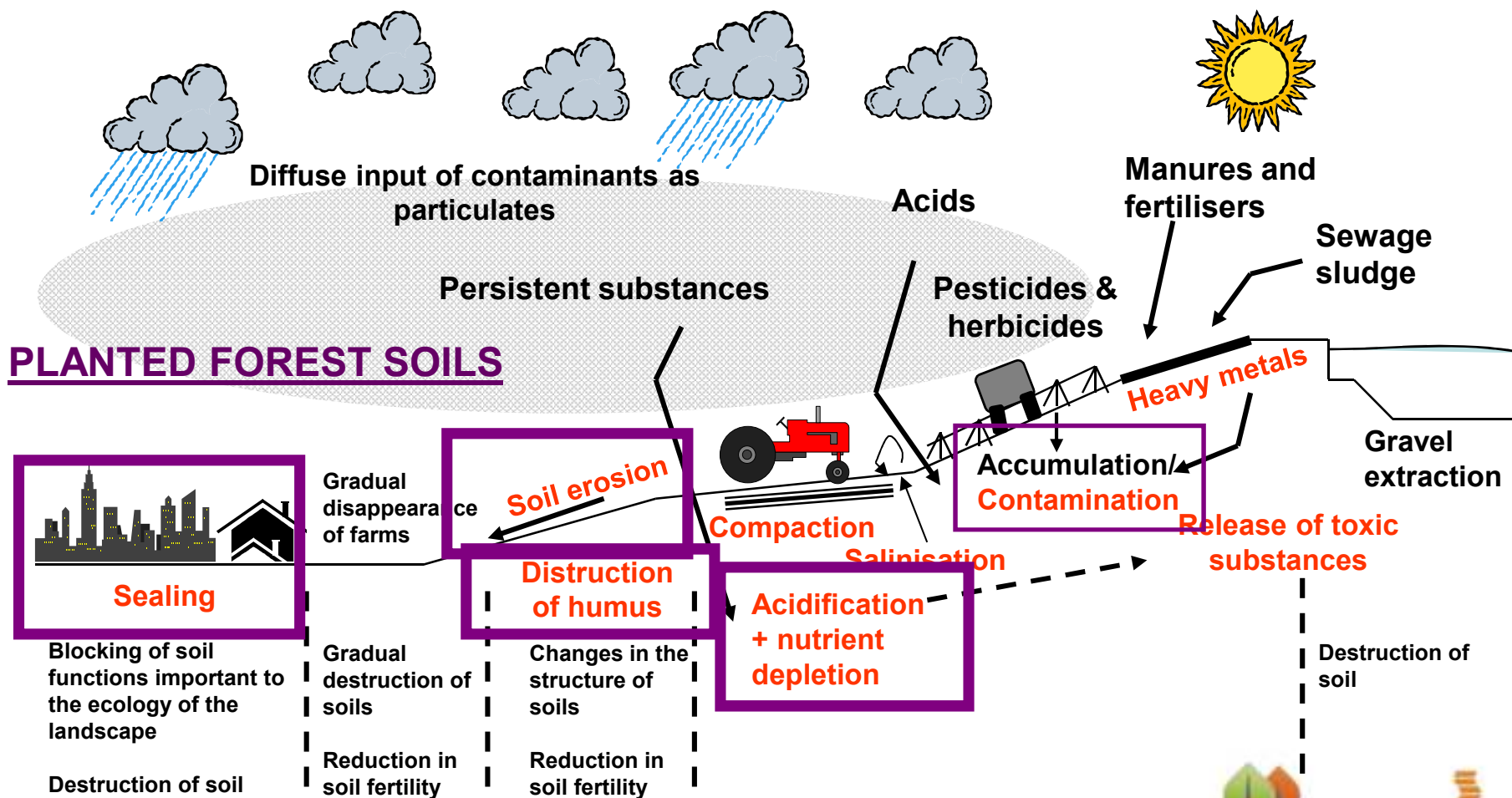


Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions



Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil erosion and related issues:

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil erosion and related issues:

- THE big issue in Iceland (related to deforestation)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil erosion and related issues:

- THE big issue in Iceland (related to deforestation)
- Not a big problem in Ireland or UK (can be solved with good management)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil erosion and related issues:

- THE big issue in Iceland (related to deforestation)
- Not a big problem in Ireland or UK (can be solved with good management)
- Not an issue in Aquitaine if soil cover is maintained under forest
(likely increased with land-use changes)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil erosion and related issues:

- THE big issue in Iceland (related to deforestation)
- Not a big problem in Ireland or UK (can be solved with good management)
- Not an issue in Aquitaine if soil cover is maintained under forest
(likely increased with land-use changes)
- Important in the Basque Country (considered by legislation)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil erosion and related issues:

- THE big issue in Iceland (related to deforestation)
- Not a big problem in Ireland or UK (can be solved with good management)
- Not an issue in Aquitaine if soil cover is maintained under forest
(likely increased with land-use changes)
- Important in the Basque Country (considered by legislation)
- Can be important in Galicia, especially after fire events

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil organic matter decline:

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil organic matter decline:

- Significant in afforested peat soils in Ireland and UK

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil organic matter decline:

- Significant in afforested peat soils in Ireland and UK
- Not a problem in Aquitaine if soil cover is maintained under forest but likely to be reduced if land-use changes

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil organic matter decline:

- Significant in afforested peat soils in Ireland and UK
- Not a problem in Aquitaine if soil cover is maintained under forest but likely to be reduced if land-use changes
- Observed in forest soils in the Basque Country (related to management)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil organic matter decline:

- Significant in afforested peat soils in Ireland and UK
- Not a problem in Aquitaine if soil cover is maintained under forest but likely to be reduced if land-use changes
- Observed in forest soils in the Basque Country (related to management)
- Major problem in Galicia (both because of afforestation and fire)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil nutrient depletion and acidification

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil nutrient depletion and acidification

- Problems with P in Ireland and Aquitaine (soil-dependent)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil nutrient depletion and acidification

- Problems with P in Ireland and Aquitaine (soil-dependent)
- Increased risks of soil nutrient loss if increased intensification

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil nutrient depletion and acidification

- Problems with P in Ireland and Aquitaine (soil-dependent)
- Increased risks of soil nutrient loss if increased intensification
- Related to SOM loss in the Basque Country (and very likely in Galicia)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil nutrient depletion and acidification

- Problems with P in Ireland and Aquitaine (soil-dependent)
- Increased risks of soil nutrient loss if increased intensification
- Related to SOM loss in the Basque Country (and very likely in Galicia)

Soil contamination

- Can be an issue (diffuse contamination and depending on forest soil management: types of amendments)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil sealing (land take)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil sealing (land take)

Not a big issue in Iceland (very low population density)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil sealing (land take)

Not a big issue in Iceland (very low population density)

- Significant problem in the Basque Country (forests on steep slopes)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Soil sealing (land take)

Not a big issue in Iceland (very low population density)

- Significant problem in the Basque Country (forests on steep slopes)

Most of these issues are:

- **Inter-related**
- **Site-specific**
- **Related to management**
- **Subjected to be affected (and affect) by climate change**

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Cross-cutting issues:

(related to forest soils degradation and protection):

1. Land-use conflicts

- Ex.:
- Tourists don't expect forests in Iceland (tourism vs. forest)
 - Agriculture needs more land to satisfy the increasing demand for food (ex.: Maize cropping in Landes: agriculture vs. forest)
 - Soil sealing in Basque Country (urban vs. forest)

Need **for identifying priorities for land use.**

(ex.: land-use strategy in the SSF)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Cross-cutting issues:

(related to forest soils degradation and protection):

2. Site-specificity of problems and solutions:

Ex.: Afforestation is...

... the solution of soil degradation problems in Iceland

... not the best practice in all soils (peatlands in UK and Ireland)

... the cause of SOM and soil fertility decline in Galicia

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Cross-cutting issues:

(related to forest soils degradation and protection):

2. Site-specificity of problems and solutions:

Ex.: Afforestation is...

... the solution of soil degradation problems in Iceland

... not the best practice in all soils (peatlands in UK and Ireland)

... the cause of SOM and soil fertility decline in Galicia

We need **site-specific assessment of forest soil degradation and site-specific**

solutions. Ex.: Forest management advice changes for different soil types

(“putting (or not) the right trees in the right places”)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Cross-cutting issues:

(related to forest soils degradation and protection):

3. Climate change issues

- Storms become more frequent and/or intense
- Forest fires
- Water availability (changes in precipitation patterns)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Cross-cutting issues:

(related to forest soils degradation and protection):

3. Climate change issues

- Storms become more frequent and/or intense
- Forest fires
- Water availability (changes in precipitation patterns)

Need for developing adaptation strategies.

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Cross-cutting issues:

(related to forest soils degradation and protection):

4. Intensification of management

Changing to more intensive systems (biomass for energy) has consequences on soil degradation trends (nutrient depletion, SOM loss, productivity, etc.)

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Cross-cutting issues:

(related to forest soils degradation and protection):

4. Intensification of management

Changing to more intensive systems (biomass for energy) has consequences on soil degradation trends (nutrient depletion, SOM loss, productivity, etc.)

Special attention to short-term rotations with fast-growing species and intensive harvest systems.

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Cross-cutting issues:

(related to forest soils degradation and protection):

4. Intensification of management

Changing to more intensive systems (biomass for energy) has consequences on soil degradation trends (nutrient depletion, SOM loss, productivity, etc.)

Special attention to short-term rotations with fast-growing species and intensive harvest systems.

Issues with economic revenue vs. forest ecological services to be solved.

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Cross-cutting issues:

(related to forest soils degradation and protection):

5. Awareness

- All cases stress the need for **soil monitoring networks** (including the identification of risk areas and/or soils)
- Evidence on the need for more **problem-solving research** (to be developed in contact with policy makers and land users).

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

Concluding remarks:

- 1. Comparative analysis is a fruitful and promising strategy in the way towards better forest soil protection.**
- 2. There is a need for a common framework for forest soil quality evaluation and research.**
- 3. Cross-sectorial and multi-actor networks should be encouraged and developed.**
- 4. Need for some trans-national harmonization and development of forest soil protection policies and policy actions, which should comprise the environmental services of soils.**

Bilbao, 09/10/2014



International workshop on SOIL DEGRADATION RISKS IN PLANTED FORESTS

Report from regional cases. Summary for discussion and conclusions

ESKERRIK ASKO

THANK YOU

MERCI

GRACIAS

Bilbao, 09/10/2014



2015

International
Year of Soils

