



*Ecosystem-based Adaptation to Climate Change and Regional Sustainable Development
by Empowerment of Ukrainian Biosphere Reserves*

Ecosystem-based Adaptation to Climate Change

Examples of eligible and non-eligible project ideas

Kevin Mack
Scientific Associate
*Centre for Economics and Ecosystem Management
Eberswalde University for Sustainable Development*

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I. Definition: Ecosystem-based Adaptation to Climate Change

Use of ecological functions, biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change.

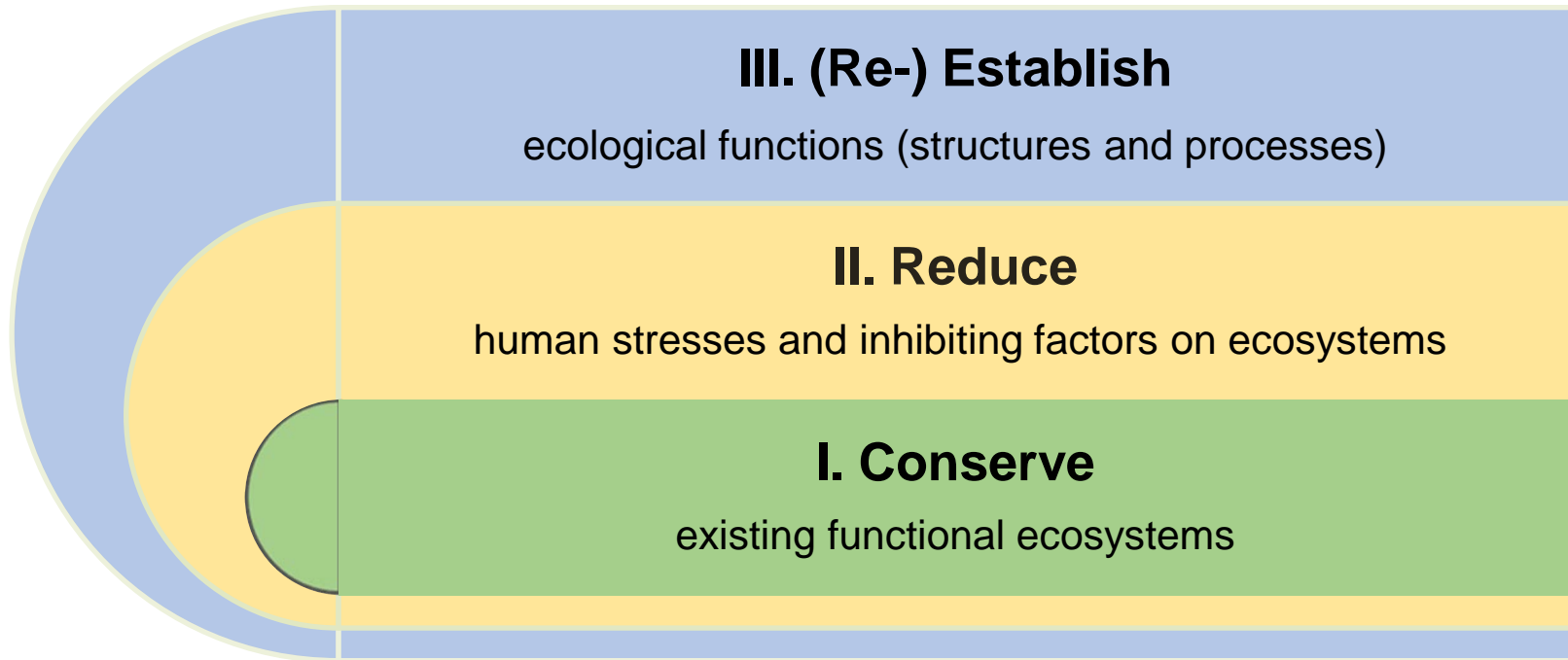
(Adapted from CBD 2009)

“Protects vulnerable communities from extreme weather while simultaneously providing a variety of ecological benefits so crucial for human well-being, such as clean water and food.”

(UN Environmental Programm 2019)



II. Three Areas of Activities / Projects



III. Examples of **eligible** projects – Forest Ecosystems

Field of Action II: Reduction of direct anthropogenic stresses and factors

Forest Ecosystems

- | | |
|----|--|
| 1. | Deconstruction of building and drainage structures |
| 2. | Reduction of use and interventions |
| 3. | Reduction of new land access, traffic and other soil degrading practices |



Examples of **eligible** projects – Forest Ecosystems

1. Deconstruction of building and drainage structures

Involved sectors and actors:

State/Regional forestry enterprise, communal and private forest owners, NGOs, nature protection groups, municipalities

Concrete steps:

1. Situation, potential and risk analysis
2. Involve stakeholders via dialog
3. Dismantling of drainage ditches
4. Monitoring of hydrological changes and forest development
5. Information campaign for regional foresters and citizens



Images: Kevin Mack



Image: Regionalforstamt Rhein-Sieg-Erf

Examples of **eligible** projects – Forest Ecosystems

Field of Action III: Targeted development of (self-) regulatory capacity

Forest Ecosystems

1. Permitting and promoting natural regeneration and ecological succession
2. Planting of deciduous trees
3. Wildlife management imitating natural dynamics
4. Enrichment and leaving of deadwood
5. Development of structurally rich forest edges (layered and sufficiently wide)
6. Differentiation of usage and zoning



Examples of **eligible** projects – Forest Ecosystems

2. Planting of deciduous trees



Image: Martin Bollmann

Involved sectors and actors:

Schools, municipalities, state forestry enterprise, private forest owners, NGOs, nature protection groups...

Concrete steps:

- E.g. planning of planting campaigns on selected locations in villages, schoolyards and continued care
- Inform other stakeholders
- Careful openings of pure coniferous stands
- Use of seeds and woody plants from indigenous and locally adapted species
- Preference for native (deciduous) tree species
- Small-scale adaptation of tree species shares according to site conditions

Examples of **eligible** projects – Forest Ecosystems

5. Development of structurally rich forest edges (layered and sufficiently wide)



Image: A. Kureck

For example:

Planning and coordination of a cooperative project between farmers and foresters to create diverse forest edges, including shared responsibility for the maintenance and use.

Involved sectors and actors:

Farmers, foresters (state and/or private), communal and regional administration, local communities...

Concrete steps:

- Situation and conflict potential analysis, stakeholder dialog
- E.g. planting events involving local communities
- Support of natural rejuvenation
- Planting of small trees and shrubs
- Promotion of undergrowth
- Maintenance of forest edge structures

Examples of **eligible** projects – Water and Wetland Ecosystems

Field of Action II: Reduction of direct anthropogenic stresses and factors

Water and Wetland Ecosystems

1. Dismantling, conversion or replacement of longitudinal shoring (at watercourses)
2. Dismantling or conversion of (water) engineering structures (transverse structures)
3. Unsealing and demolition of buildings in the riparian strips/buffer zone
4. Reduction of the extraction of biomass in and around water bodies
5. Reduction of drainage measures in fens, bogs and other wetlands

Examples of **eligible** projects – Water and Wetland Ecosystems

1. Dismantling, conversion or replacement of longitudinal shoring (at watercourses)

Involved sectors and actors:

State and regional water administration boards, local communities, municipalities, NGOs, nature protection organizations, private land-owners...

Concrete steps:

- Risk assessment and stakeholder involvement
- Depiping
- Replacement of bank protection made of stone or concrete by bioengineering methods
- Leave shore areas to natural development



Image: Kanton Bern



Image: Canadian Institute of Ukrainian Studies



Examples of **eligible** projects – Water and Wetland Ecosystems

2. Dismantling or conversion of (water) engineering structures (transverse structures)

Involved sectors and actors:

State and regional water administration boards, local communities, municipalities, NGOs, nature protection organizations, private land-owners...

Concrete steps:

- Risk assessment (changes in hydrological regime)
- Stakeholder dialog
- Deconstruction of:
 - Control structures (weirs)
 - Riverbed structures with falls
 - Crossing structures (bridges, passages)
- Installation of a bypass watercourse



Image: V. Detering

Examples of **eligible** projects – Water and Wetland Ecosystems

5. Reduction of drainage measures in fens, bogs and other wetlands

Involved sectors and actors:

State and regional water administration boards, local communities, municipalities, NGOs, nature protection organizations, private land-owners...

Concrete steps:

- Situation, risk and potential analysis
- Communication with stakeholders
- Controlled dismantling/filling of drainages
- Limiting of water extraction rates and use (e.g. by land users) especially during low water



Image: Life Schreiadler Project, SCBR

Examples of **eligible** projects – Water and Wetland Ecosystems

Field of Action III: Targeted development of (self-) regulatory capacity

Water and Wetland Ecosystems

1. Rewetting and restoration of moors, bogs and other wetlands
2. Near-natural development and restoration of watercourses
3. Creation of retention areas and natural intermediate water storage
4. Creation, development and maintenance of riparian strips with complex, near-natural vegetation structure
5. Support of near natural structural elements



Examples of **eligible** projects – Water and Wetland Ecosystems

1. Rewetting and restoration of moors, bogs and other wetlands

Project examples:

- Re-establishment of a former wetland (rebuilding)
- Rehabilitation of a degraded wetland (repairing the functions)
- Controlled dismantling and closure of drains

Involved sectors and actors:

Farmers, forestry, water management, spatial planning, tourism, nature protection, local communities

Concrete steps:

1. Situation, potential and risk analysis
2. Involve local community via dialog
3. Deactivation of ditches and drainages
4. Site-adapted use (Paludiculture)
5. E.g. establish a “mire adventure” trail

Example projects: [in the UK](#) (English only)
[in Germany](#) (English only)



Images: Life Schreiadler Project, SCBR

Examples of **eligible** projects – Water and Wetland Ecosystems

2. Near-natural development and restoration of watercourses

Project examples:

- Development of diversified banks, allow and create meanders
- Riverbed widening
- Re-connection of cut-off meanders

Involved sectors and actors:

National and regional water boards, municipalities, regional administration, private landowners, farmers, foresters, local communities

Concrete steps:

1. Situation, potential and risk analysis
2. Involve affected stakeholders via dialog format
3. Implement measure
4. Monitor developments
5. Conduct excursions and information events on project



Image: Lippeverband

Example project in Germany (English only)

Examples of **eligible** projects – Water and Wetland Ecosystems

4. Creation, development and maintenance of riparian strips with complex, near-natural vegetation structure



Image: National Agroforestry Center



Image: A. Ellis

Examples of **eligible** projects – Openland Ecosystems

Field of Action II: Reduction of direct anthropogenic stresses and factors

Openland

1. Deconstruction of building structures (including unsealing and deconstruction of drainage structures)
2. Reduction of access to land and soil cultivation (intensity)
3. Continuous soil cover by leaving agricultural residues on the field and planting cover crops
4. Avoidance and reduction of fertilizers and pesticides
5. Diversification and adaptation of agricultural practices, crops and livestock to (changing) site conditions

Examples of **eligible** projects – Openland Ecosystems

1. Deconstruction of building structures (including unsealing and deconstruction of drainage structures)

Involved sectors and actors:

Farmers, private landowners, water boards, local communities, regional administration

Project examples:

- Deconstruction of drainages
- Filling of drainages
- Deconstruction of paths and roads



Images: Life Schreiadler Project, SCBR

Examples of **eligible** projects – Openland Ecosystems

4. Avoidance and reduction of fertilizers and pesticides

5. Diversification and adaptation of agricultural practices, crops and livestock to (changing) site conditions

Example: Projects promoting organic farming

- Increase of crop diversity
- Mulching
- Crop rotation
- Adjusting of sowing dates
- Continuous soil cover
- Conservation tillage and fertilization
- Efforts to increase humus content etc.

Image: J. Dore



Example [Project in Sweden](#) (English only)

Image: civileats

Examples of **eligible** projects – Openland Ecosystems

Field of Action III: Targeted development of (self-) regulatory capacity

Openland

1. Planting of groves and woody crops
2. Creation of permanent green field margins and flowered areas
3. Establishing small-scale mosaic structure
4. Conversion of intensively used areas into more extensive forms of use such as agroforestry systems
5. Conversion of open land into forest



Examples of **eligible** projects – Openland Ecosystems

1. Planting of groves and woody crops

Projects increasing “green structural diversity”

Example:

Creation of x km of hedges and woody plants on church territory, communal territory, private land etc.

Involved sectors and actors:

Church, local community, private landowners, farmers, foresters (planting), municipality (coordination) etc.



Images: Bernau.Pro.Klima

Examples of **eligible** projects – Openland Ecosystems

3. Establishing small-scale mosaic structure

Project Examples:

Separation of large fields into many smaller sections by planting of lines of shrubs, bushes and trees (width about 3-4m)

Stakeholders: Farmers, foresters (planting), municipality (coordination) etc.

Revitalization of field pits

Active groups : Farmers

Tree (also climate-plastic fruit trees) planting along roads and trails

E.g. a project called „a thousand trees for xy“

Active groups: Communal and regional administration, municipality, local community, foresters

Establish and maintain permanent pasture

- Creation of flower strips
- Allow for natural succession

Image: forest research

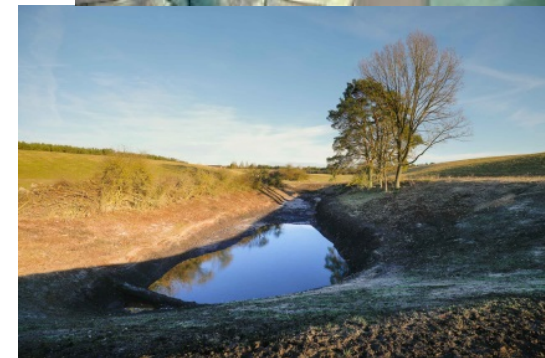


Image: C. Schneider

Examples of **eligible** projects – Openland Ecosystems

3.+ 4. Projects promoting solidary, climate adapted and organic farming

Farmers and consumers of their products have an agreement. Consumers will buy a guaranteed amount of produces of produces which improve the climate adaptive capacity of their agricultural ecosystems, for example:

- Creation of hedgerows, fallow areas, forest strips and extensive meadows
- Increase of crop diversity, mulching, crop rotation, adjusting of sowing dates, continuous soil cover, conservation tillage, and fertilization, efforts to increase humus content etc.
- Conversion of agricultural fields to extensive grassland
- Extensive animal husbandry (cows, sheep, horses etc.)

Involved sectors and actors:

Project management, farmers, consumers, experts for solidary and organic farming etc.



Images: Bernau.Pro.Klima

Examples of **eligible** projects – Openland Ecosystems

4.+ 5. Projects promoting agroforestry

- By natural succession development
- By planting (fruit trees, native and climate-adapted species)



Image by nubip

Examples of **eligible** projects – Openland Ecosystems

Field of Action II: Reduction of direct anthropogenic stresses and factors

Settlement and Urban Ecosystems

1. Surface unsealing
2. Deconstruction of buildings and other vertical structures
3. Deconstruction of drainage structures
4. Ecological green space management



Image by European Environmental Agency



Image by Adel Abriss



Image by CRC

Examples of **eligible** projects – Settlement and Urban Ecosystems

Field of Action III: Targeted development of (self-) regulatory capacity

Settlement and Urban Ecosystems

1. Use of permeable surface coverings
2. Creation of close-to-nature ponds
3. Planting of trees and groves that are capable of long-term development
4. Conversion of well-kept green areas with few species and structures into richer, extensive systems
5. Extension and new development of green and open spaces
6. Greening of vertical structures
7. Roof greening
8. Greening of sealed ground surfaces (streets, squares, parking lots) by superimposed structures
9. Increase the proportion of dead plant biomass

Examples of **eligible** projects – Settlement and Urban Ecosystems

1. Use of permeable surface coverings

Make use of permeable surface coverings for (already) planned infrastructure or use after dismantling of sealed surfaces.

Concrete steps:

1. Situation, potential and risk analysis
2. Removal/Dismantling of soil-sealing structures
3. Installation of permeable surface covering
4. Information campaign and dialog with stakeholders/other users

Involved sectors and actors:

Municipality, local communities, private land owners, schools, companies etc.

[More information](#) (English only)



Image by Andras Kis

Examples of **eligible** projects – Settlement and Urban Ecosystems

2. Creation of near-natural ponds

Reestablish or create near-natural ponds within the village or settlement boundaries.

Concrete steps:

1. Situation, potential and risk analysis
2. Creation of pond
3. Planting of shrubs and woody plants in the surroundings
4. Information campaign and dialog with stakeholders/other users

Involved sectors and actors:

Municipality, town administration, private landowners, local community, landscape ecologists etc.

Project example:

Creation and care of ponds, riparian strips with complex, near-natural vegetation structure in:

- Schoolyards including thematic inclusion in curricula (e.g. biology)
- Municipal areas



Illustration by Stuart Jackson Carter

Examples of **eligible** projects – Settlement and Urban Ecosystems

3. Planting of trees and groves that are capable of long-term development

Concrete steps:

1. Situation, potential and risk analysis
2. Information campaign and dialog with stakeholders/other users
3. Planting events for the selected areas

Involved sectors and actors:

Municipality, town administration, private landowners, local community, schools, ecologists, landscape planners etc.



Image by Shcherbakov Ilya

IV Some examples of **non-eligible** projects

IV

Some examples of non-eligible projects



IV Some examples of **non-eligible** projects

Projects altering natural water regimes and regulation processes

- Construction and maintenance efforts of dams, drainage systems, canals

Image: Bundesarchiv



Image: V. Detering



Image: inatura



Image: wikicommons

IV Some examples of **non-eligible** projects

Projects developing and requiring technology, engineering and physical infrastructure such as

- Windbreaks (nets, walls, fences), physical erosion control (e.g. gabions, plasticulture, riprap, sand fences...)



Image: hightop



Image: maccaferri



Images: primalgroup

IV Some examples of **non-eligible** projects

Projects developing and requiring technology, engineering and physical infrastructure such as

- Introduction of industrial soil cultivating technologies



Image: techreview



Image: Степан Флекей



Image: civileats

IV Some examples of **non-eligible** projects

Projects developing and requiring technology, engineering and physical infrastructure such as

- Building of recreation facilities
- Installation or extension of waste disposal system and sewage systems



Image: Hata Viddyhata



Image: the intercept



Image: Wesbild

IV Some examples of **non-eligible** projects

Projects aiming at climate change mitigation by

- Introduction of renewable energy sources like solar, wind and small hydro



Images by pixabay



Image by kraft-on



IV Some examples of **non-eligible** projects

Projects aiming at climate change mitigation by

- Sustainable transport (electric vehicles, biofuels, car-sharing, etc.)
- Promoting energy efficiency
- Greenhouse gas emission reduction and technologies for carbon sequestration



Images by pixabay



Image by M. Murphy

Thank you for your attention!



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