Assessing and Managing Environmental Impacts of Infrastructural Investments

Darejan Kapanadze, PhD, MPA

The World Bank

Construction, production and service sectors are subject to environmental impact assessment, as well as sectoral and regional development strategies and programs

Environmental Assessment Code of Georgia 2018

Each citizen has the right to live in the healthy environment

Constitution of Georgia 1995

Purpose of environmental impact assessment is to rule out unacceptable activities and provide guidance for the management of environmental risks of acceptable activities

Environmental assessment reports are subject to expert review followed by conclusion (positive conclusion = permit to proceed) which usually includes conditions

Integral part of environmental assessment is identification of risks and planning for their management

Common types of expected negative environmental impacts from construction and operation of infrastructure:

- disruption of ecosystems and delivery of ecosystem services
- triggering or activating geologic activity
- mismanagement of waste
- unsustainable extraction of natural construction materials and other use of living natural resources
- impact on aesthetic value or landscapes.

as well as:

- damage to cultural heritage
- nuisance to affected communities; impact on their property and livelihood
- health impacts on labor force
- unequal treatment of vulnerable groups.

Role of natural science, including biotechnology, in mitigating negative environmental impacts of construction and operation of infrastructure:

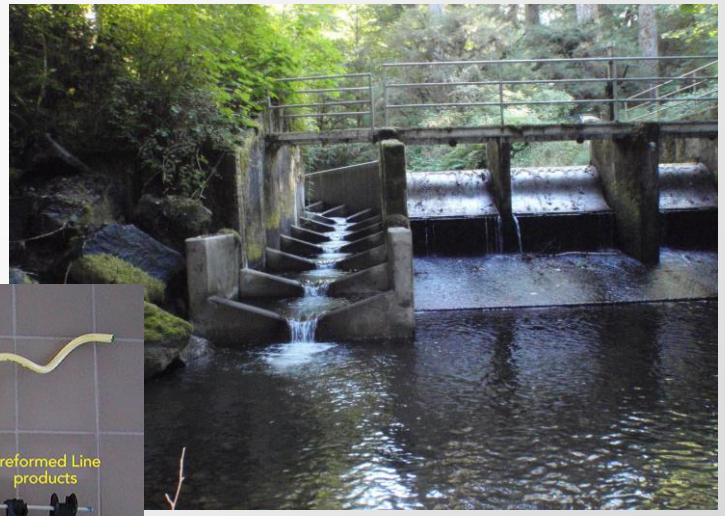
Protecting specimen of valuable plant and animal species and retaining viability of populations

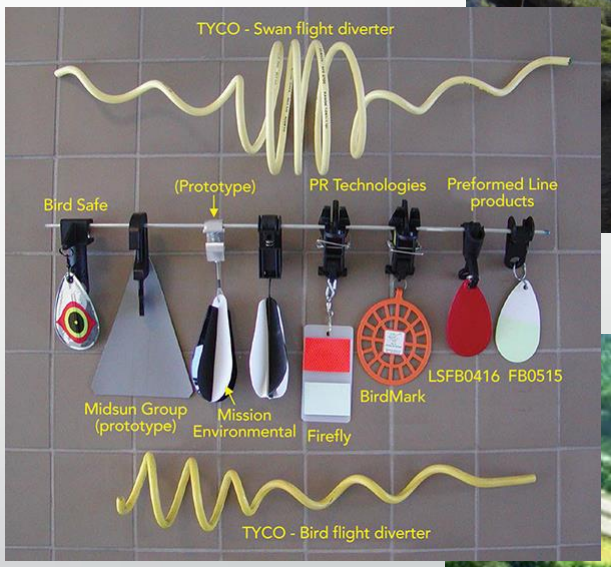
Construction Phase:

Planning works outside breeding/spawning periods

Re-planting of endangered plant specimen

Preventing spread of alien species





Operation Phase:

Animal underpasses and overpasses

Bird reflectors on power transmission lines

Fish ladders for artificial hydraulic structures

Sustainable disposal, recycling and reuse of waste

- Bioremediation of oil spills
- Constructed wetlands for wastewater treatment
- Biodegradation of plastics

Selection, sustainable use and conservation of quarries; harmonization of closed quarries with the natural landscape

Mitigation of slope erosion:

- Gabions,
- Retention walls,
- Terracing and other landscaping,
- Geotextiles,
- Planting, hydroseeding and other greening,
- Drainage