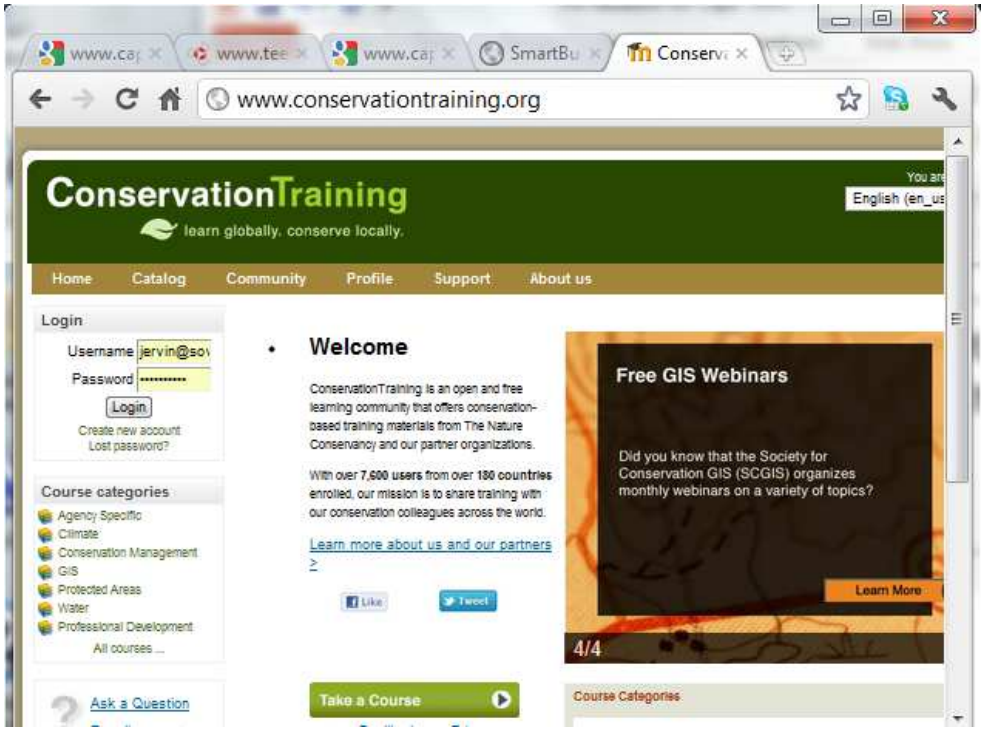
Assessing protected area values:
Making the economic case for conservation

Serbia, June 4 – 8, Jamison Ervin, UNDP Senior Advisor

TWO WAYS TO ACCESS E-LEARNING MODULES



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E-module on PA policy and valuation

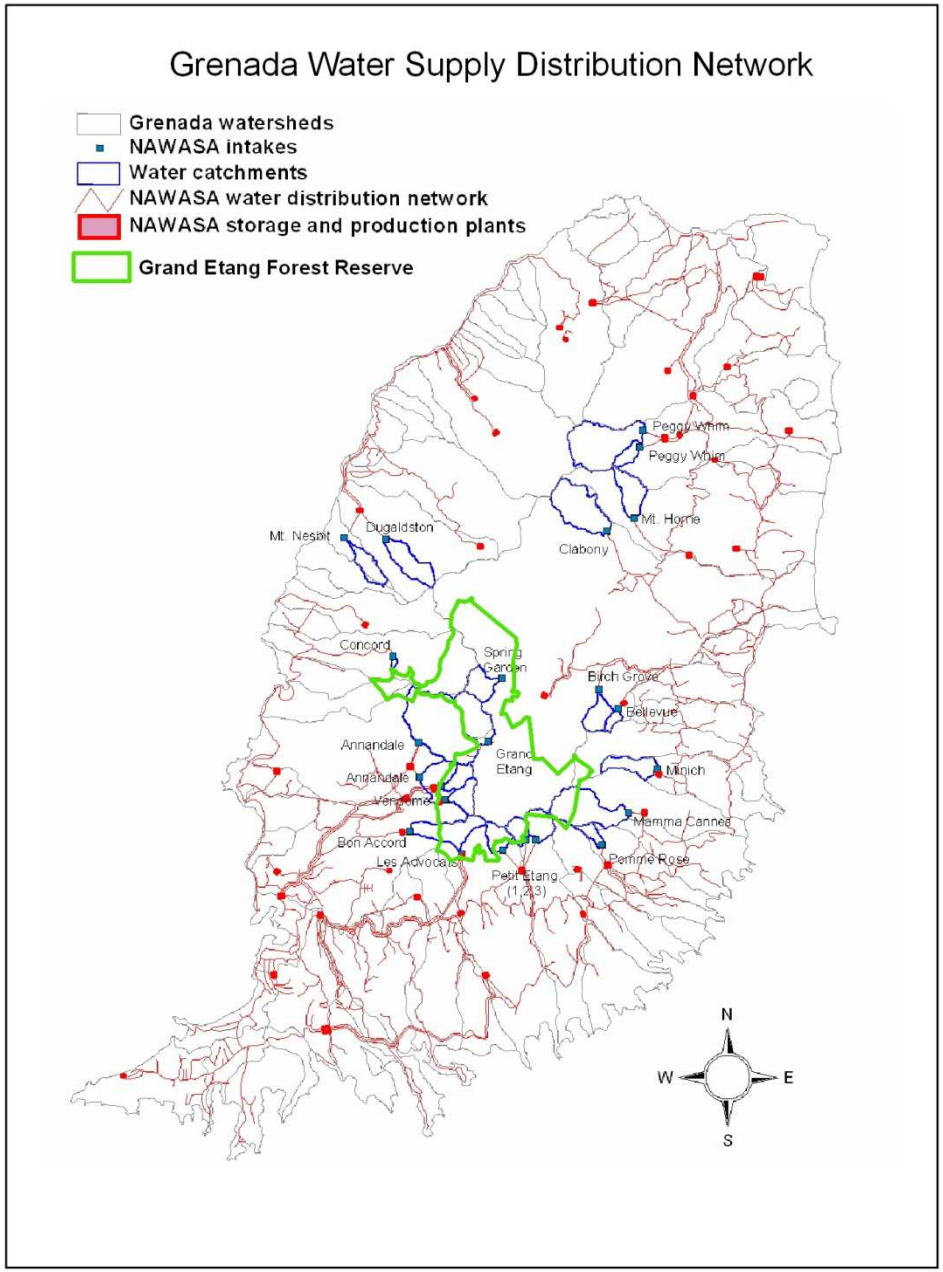
35000 ha of forest store over 1.4 billion gallons of water per day, serving more than 8 million people daily

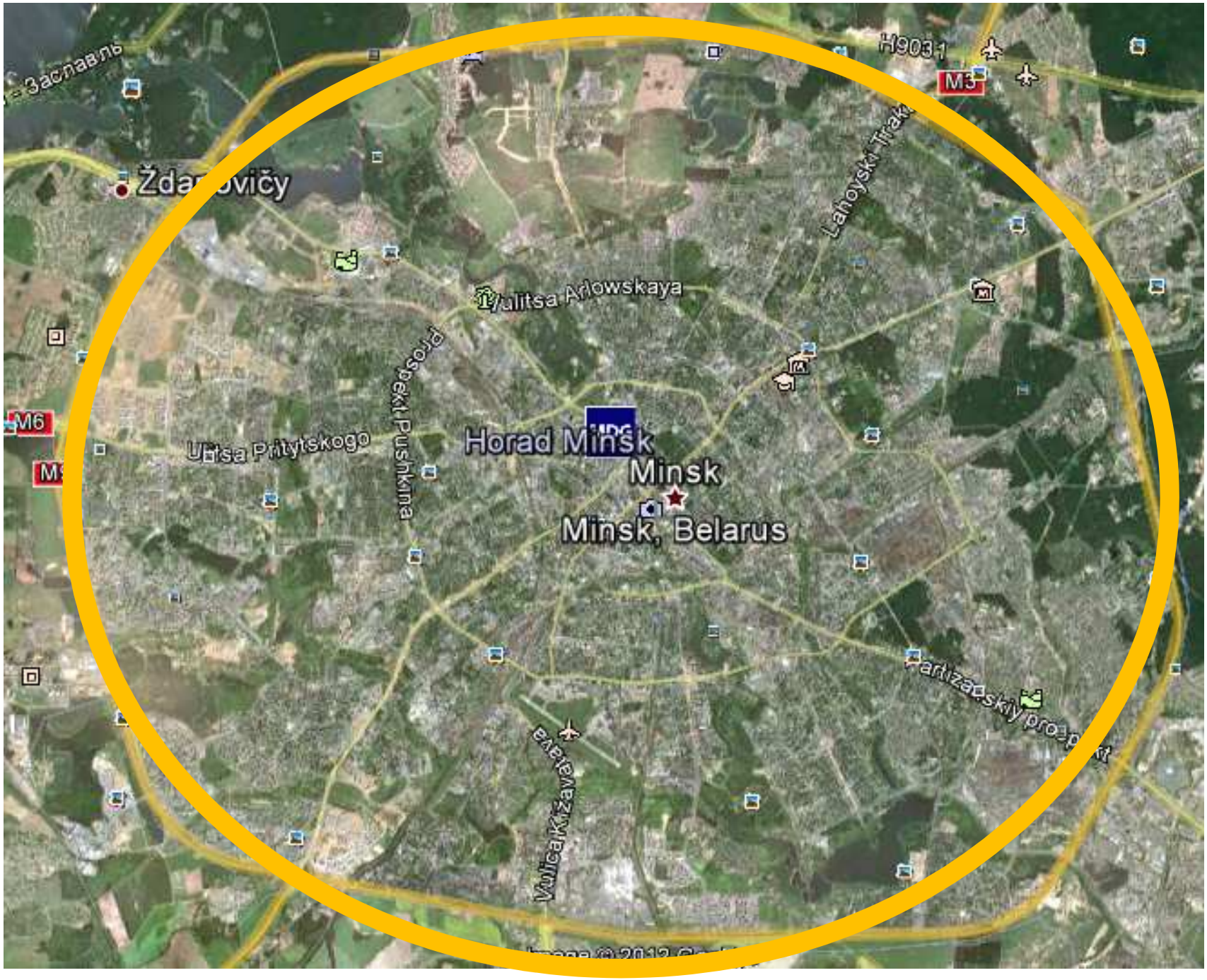
The cost is $320 million, BUT this investment avoids $6 billion in water treatment costs (plus $300 million/year in operating costs)

Protected areas = 9% of the Western Cape,
but provide 60 % of the water generated

8 million residents of Bogota obtain water from Chingaza and Sumapaz national parks.

Grand Etang: Supplies 90% of Grenada's water supply AND cruise ships with water and avoids $15mm annually

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prospekt Pushkina
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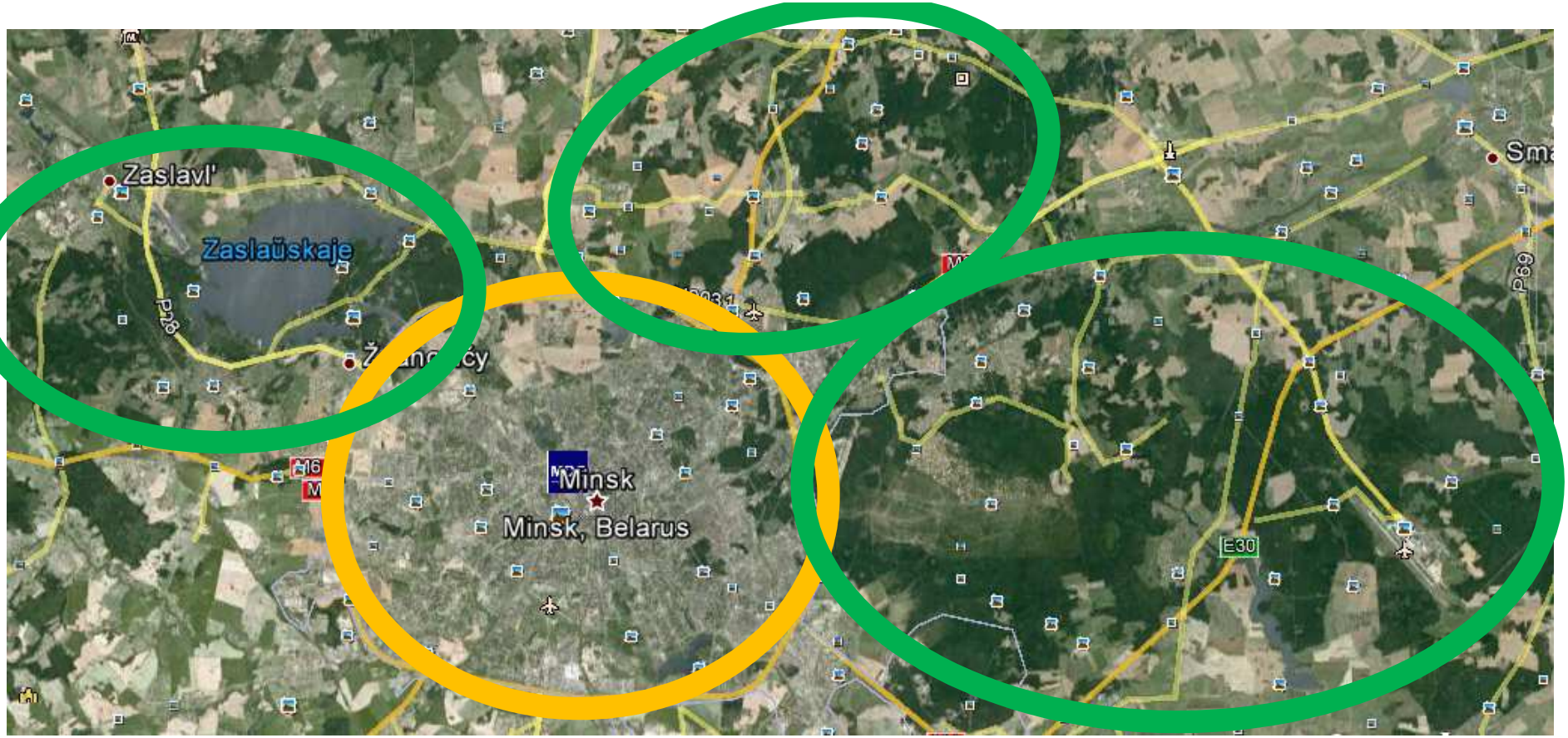
Horad Minsk
Minsk
Minsk, Belarus
Partizanskiy prospekt
Vulica Kazavaya


Zaslavl'
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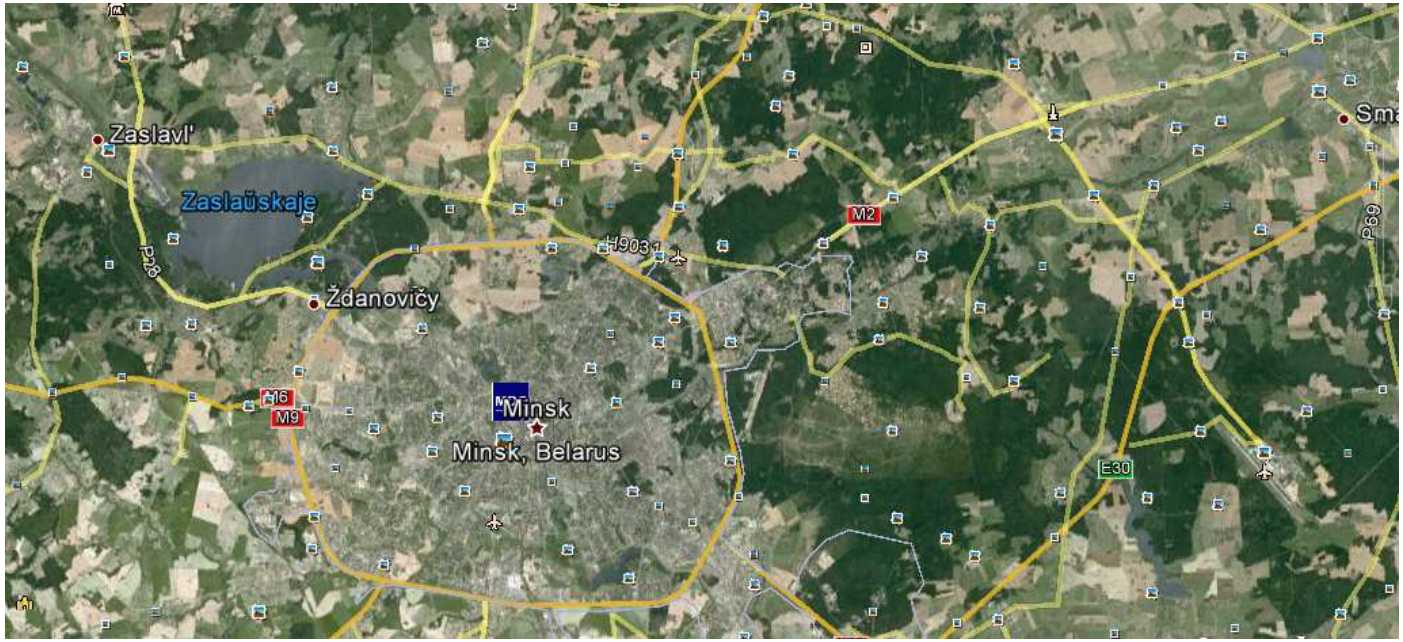
Minsk
Minsk, Belarus
E30

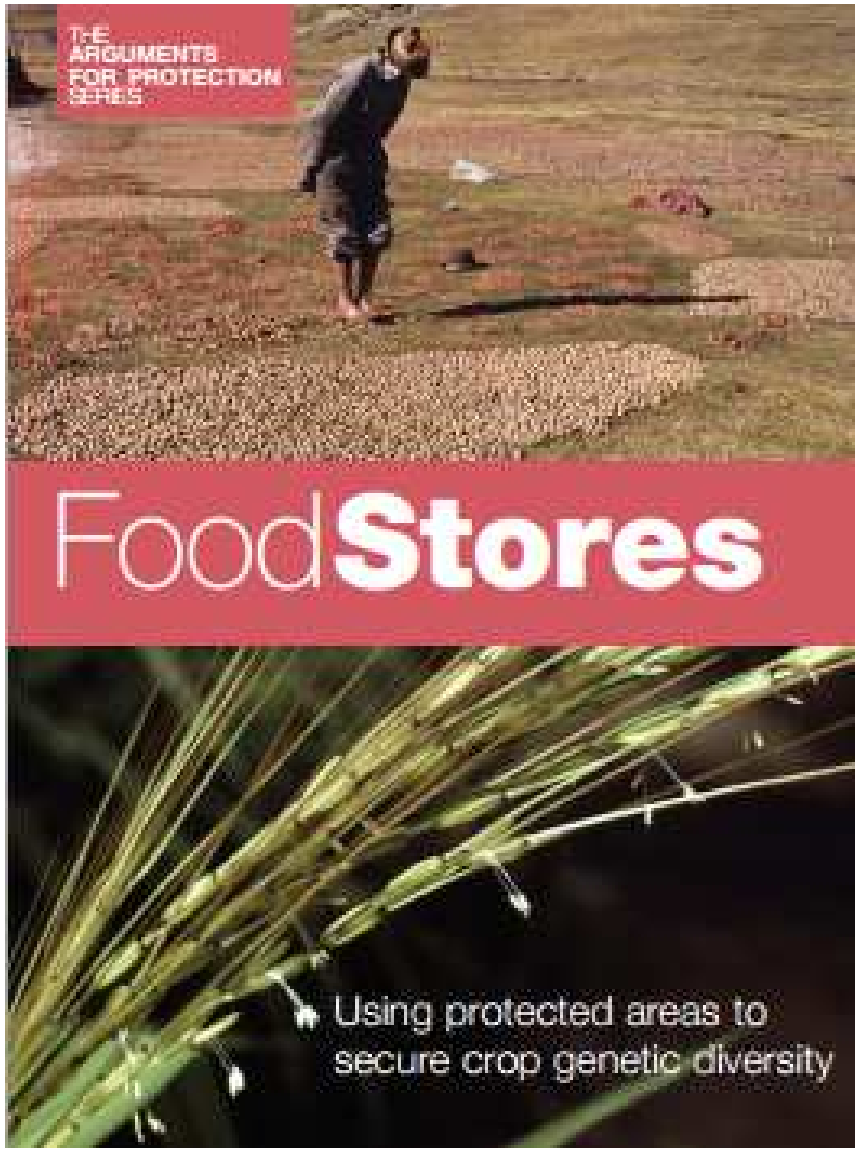


- A green belt around the city of about 80 km and a protective zone around the Minsk reservoir
- Provides drinking water for much of Minsk

Erebuni State Reserve in Armenia (89 ha)

Erebuni State Reserve (89 ha)

- Wild crop center for wheat
- Global wheat production = ~700 million tons
- Staple for 1/3 of humanity
- Wild crops = disease resistance, nutrition, climate resilience



Wild Crop Relatives

Armenia
- Dilijan
- Khosrov
- Sevan

Azerbaijan
- Arazboyu
- Basutchay
- Ordubad

Georgia
- Algeti

Iran
- Angoran
- Arasbaran
- Kiamaky
- Marakan
- Urumieh Lake
- Sarany
- Tandoureh
- Turkmenistan
- Guryhowdan
- Kopetdag
- Meana-Chaacha
- Pulihatum
- Sunt-Khasardag

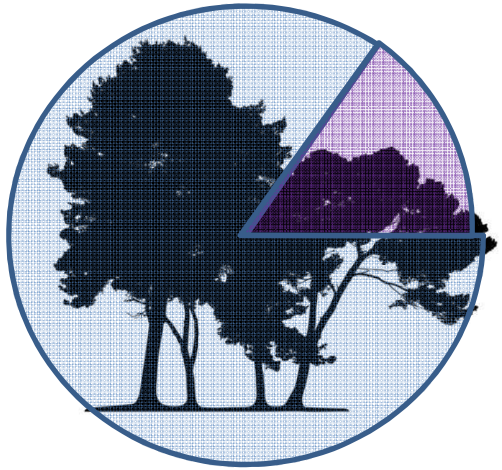
Kyrgyzstan
- Akbuurin
- Besh-Aral
- Chandalash
- Chychkan
- Gulchin
- Kara-Shoro
- Kyrgyz-Ata NP
- Manass
- Sary-Chelekskiy
- South Kyrgyz
- Yassin

Tajikistan
- Aktashsky
- Chil'dukhtaronsky
- Dashtidzumsky
- Dashtimaidonsky
- Iskanderkul'sky
- Komarou
- Ramit
- Saivatinsky
- Sarykhosorsky
- Shirkent
- Tigrovaya Balka

IMPACTS

IMPACTS

BENEFITS



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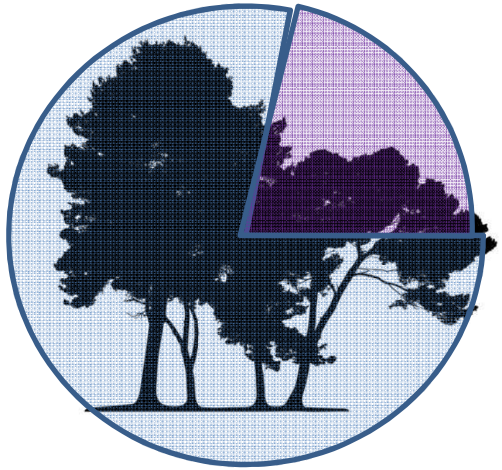

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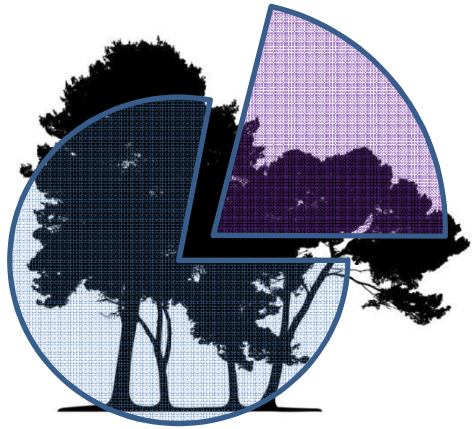

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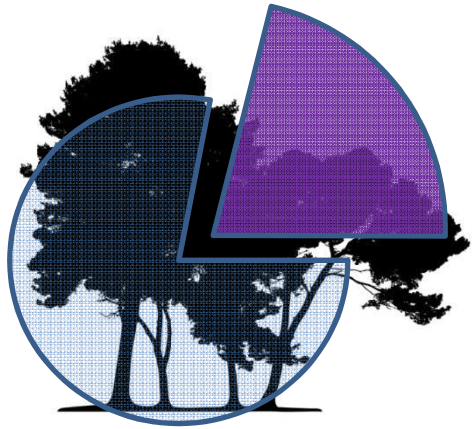

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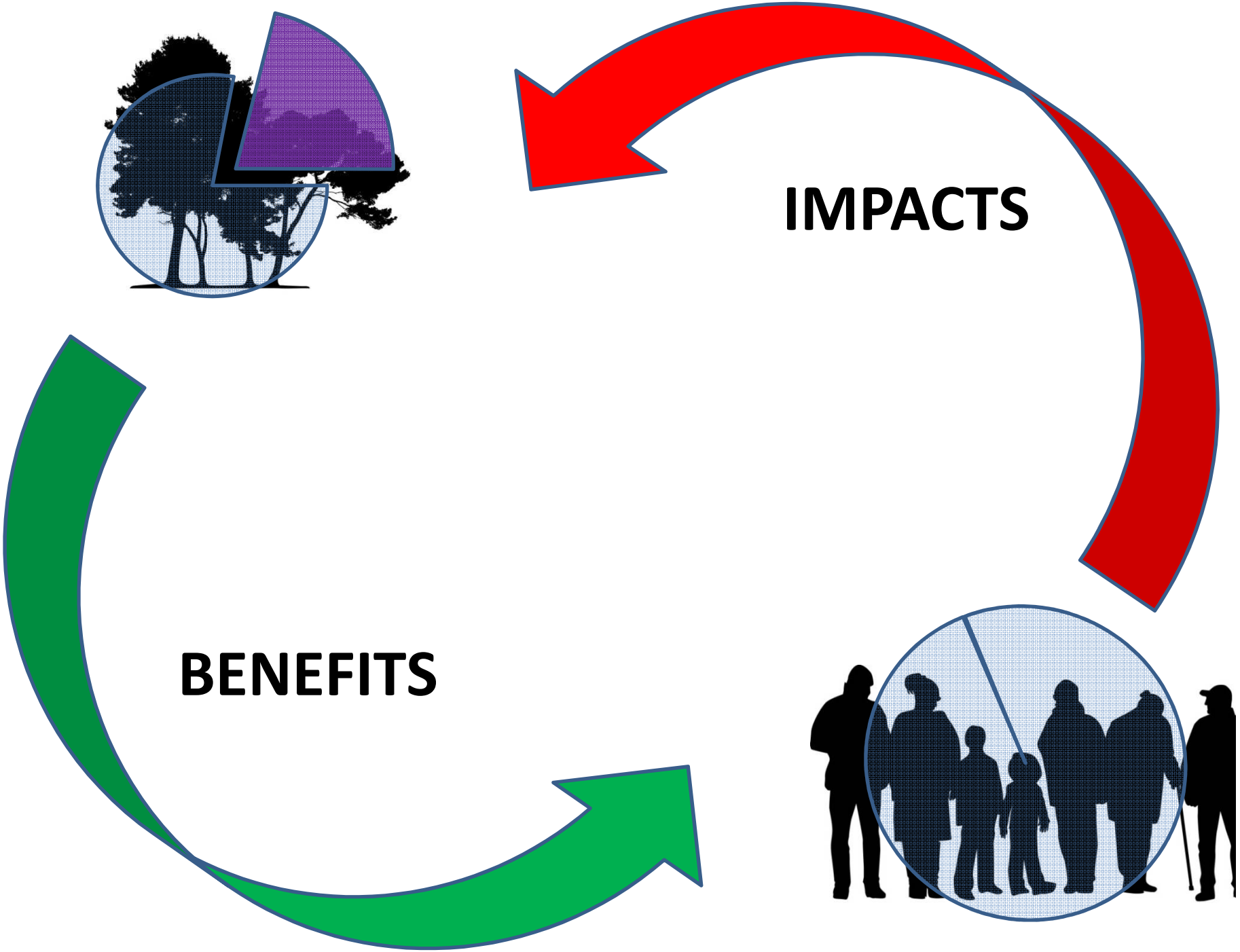
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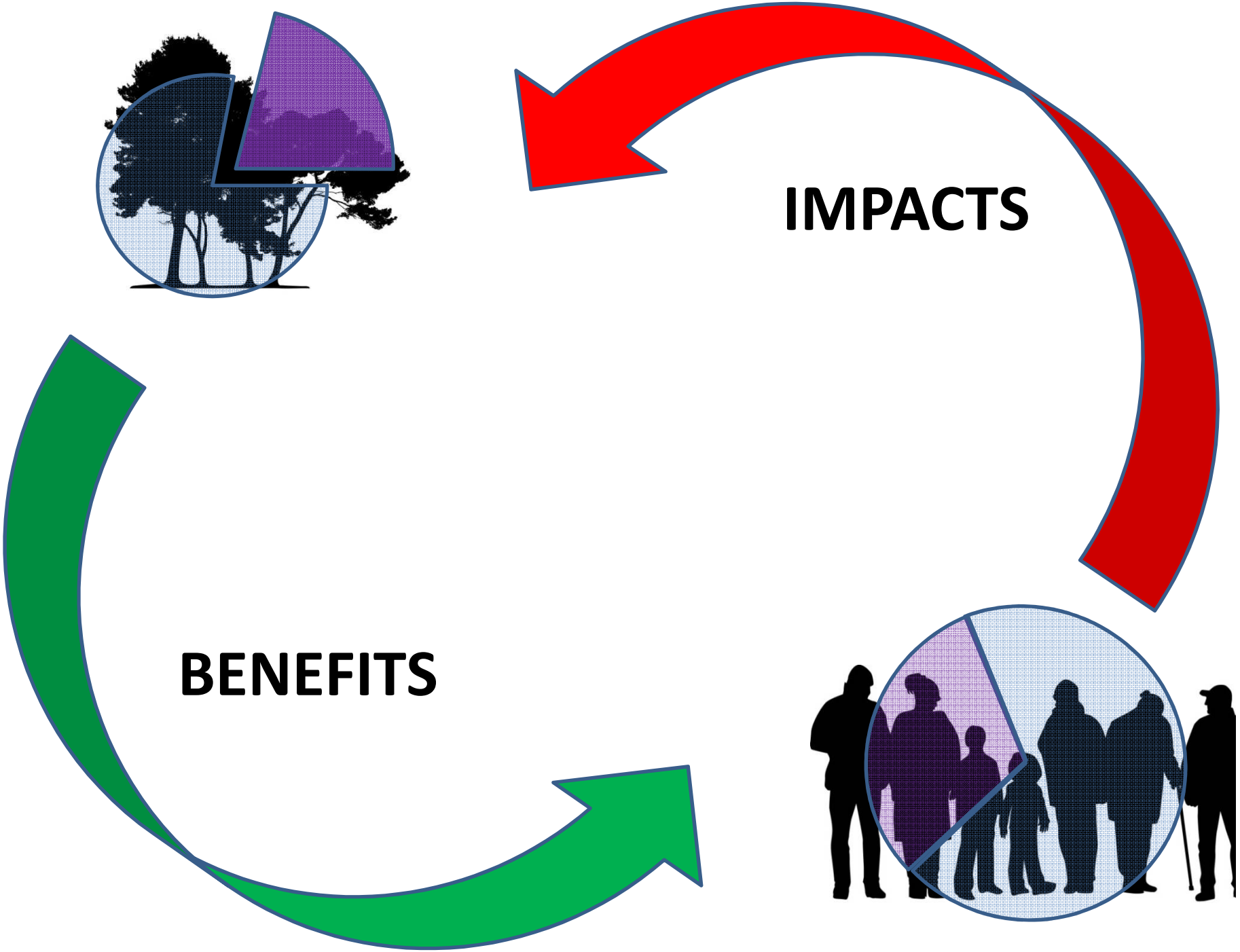
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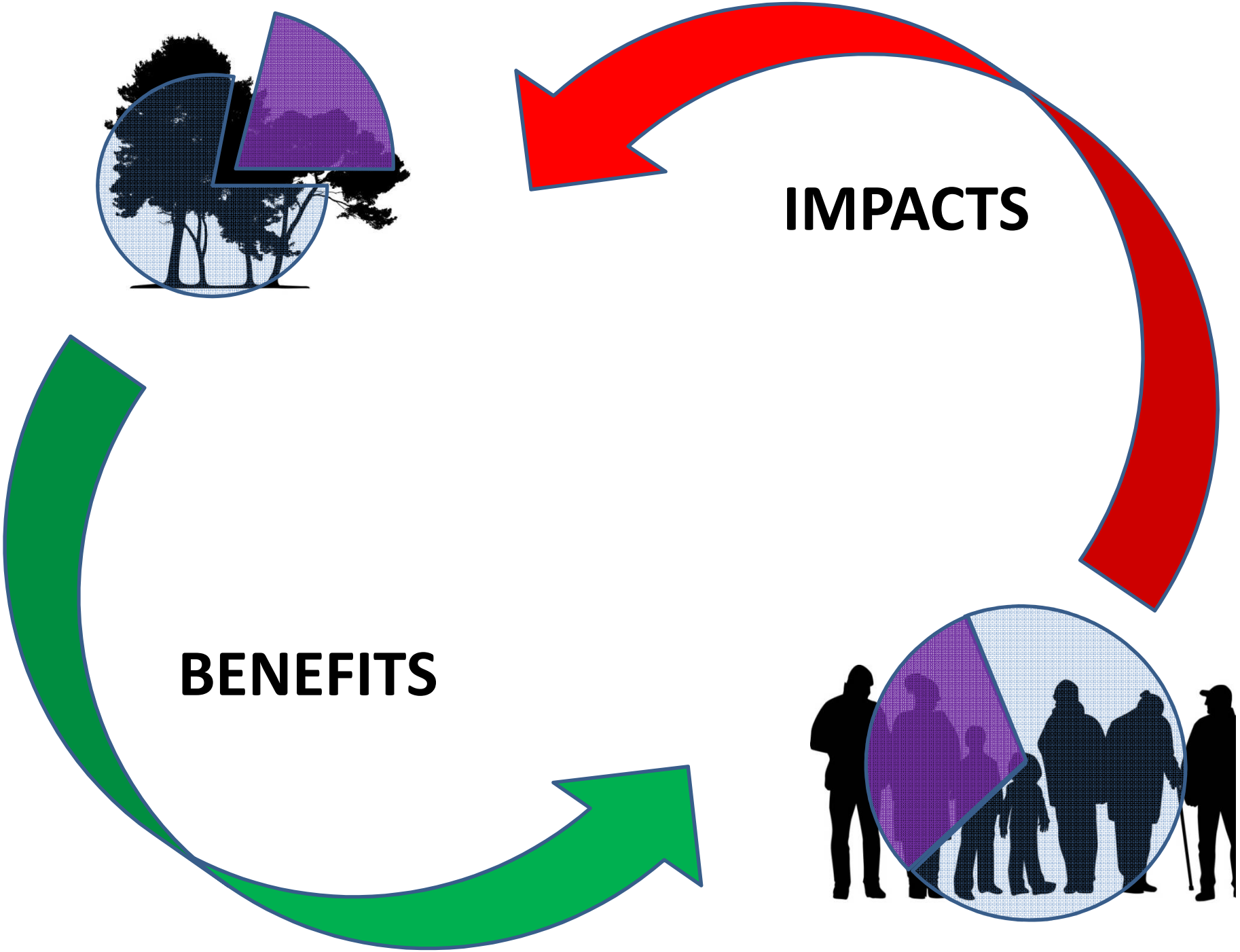
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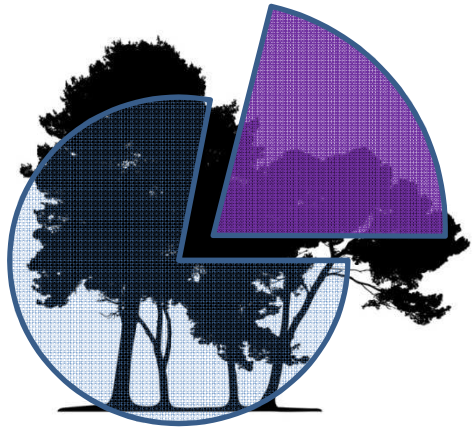

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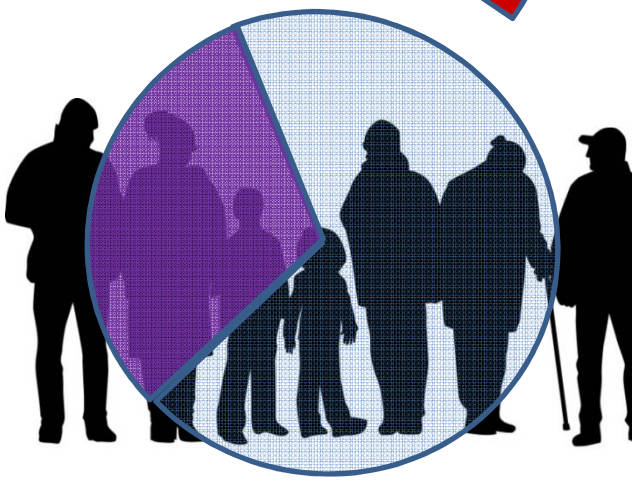
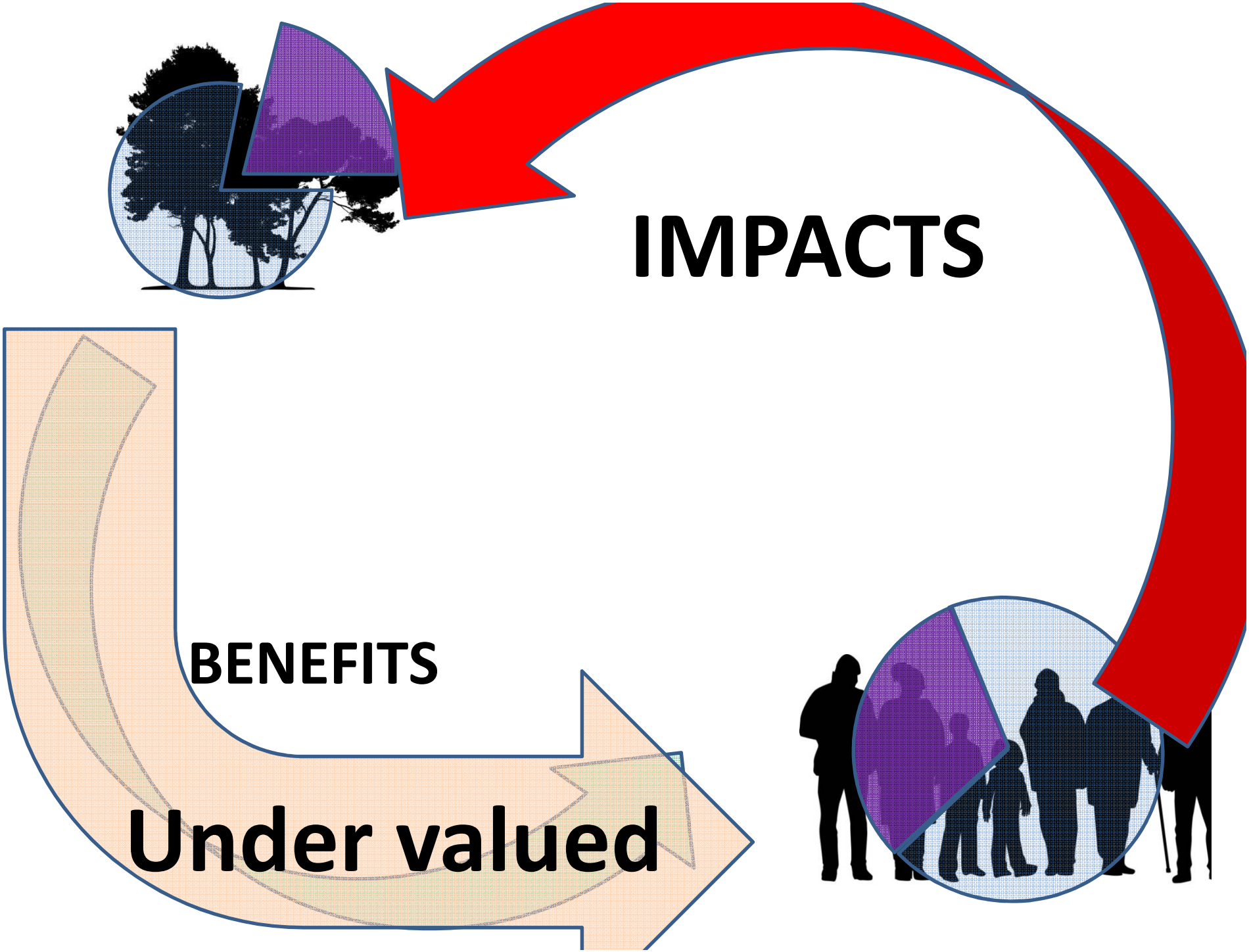


BENEFITS

Under valued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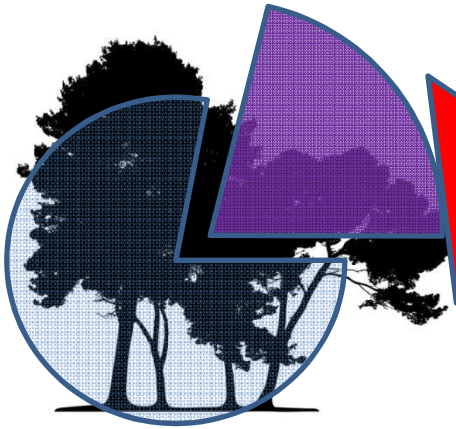

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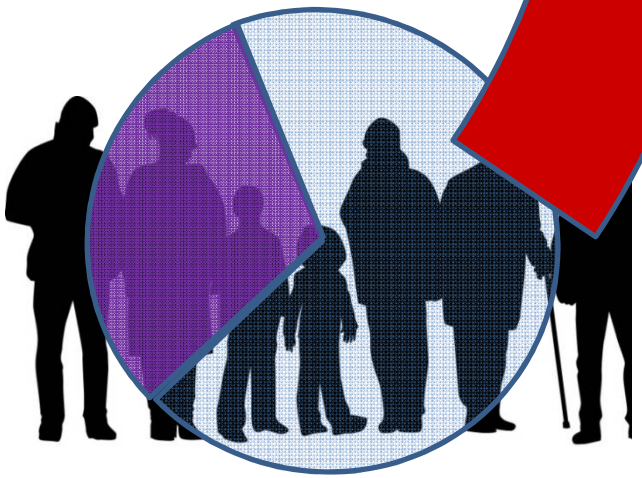

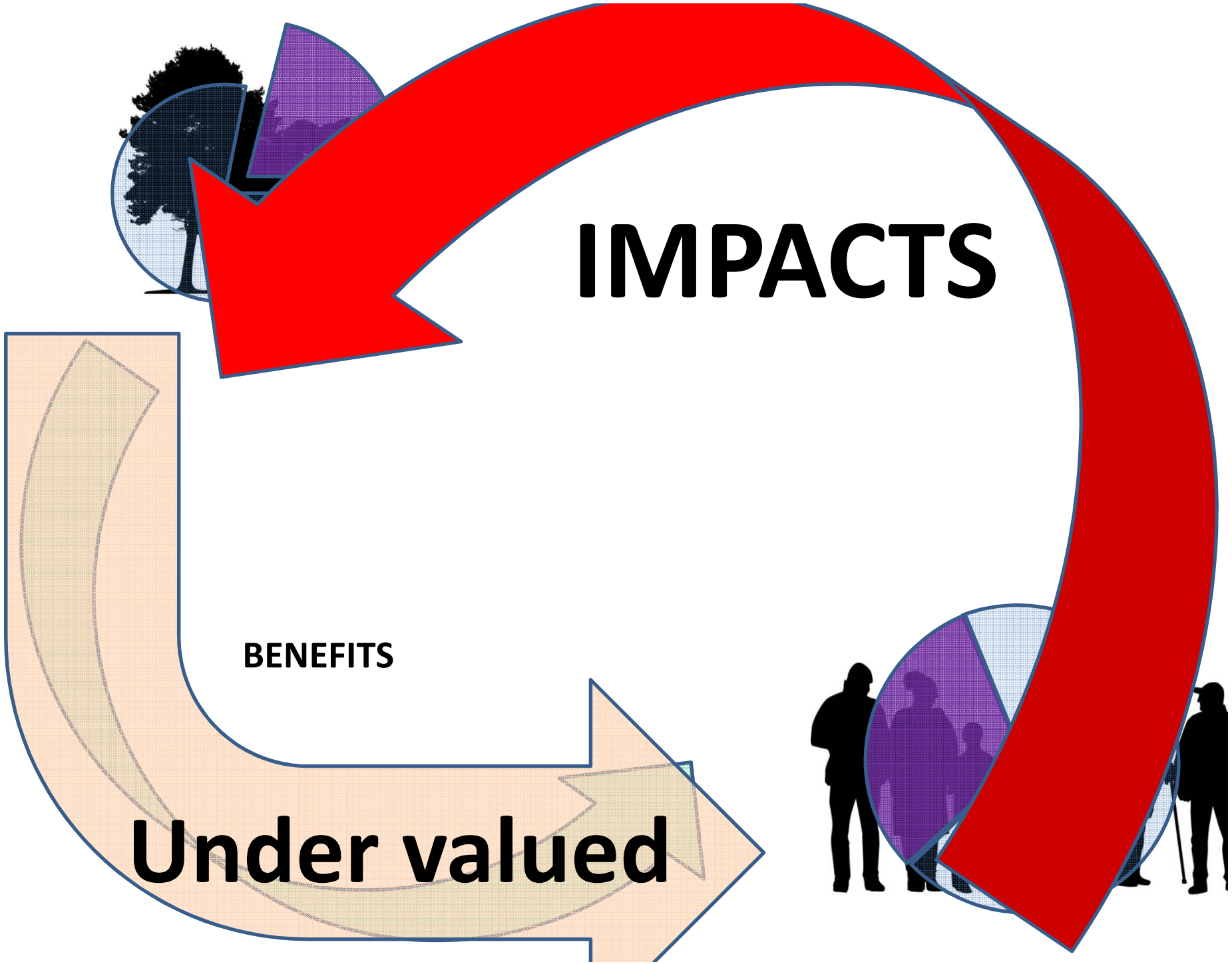
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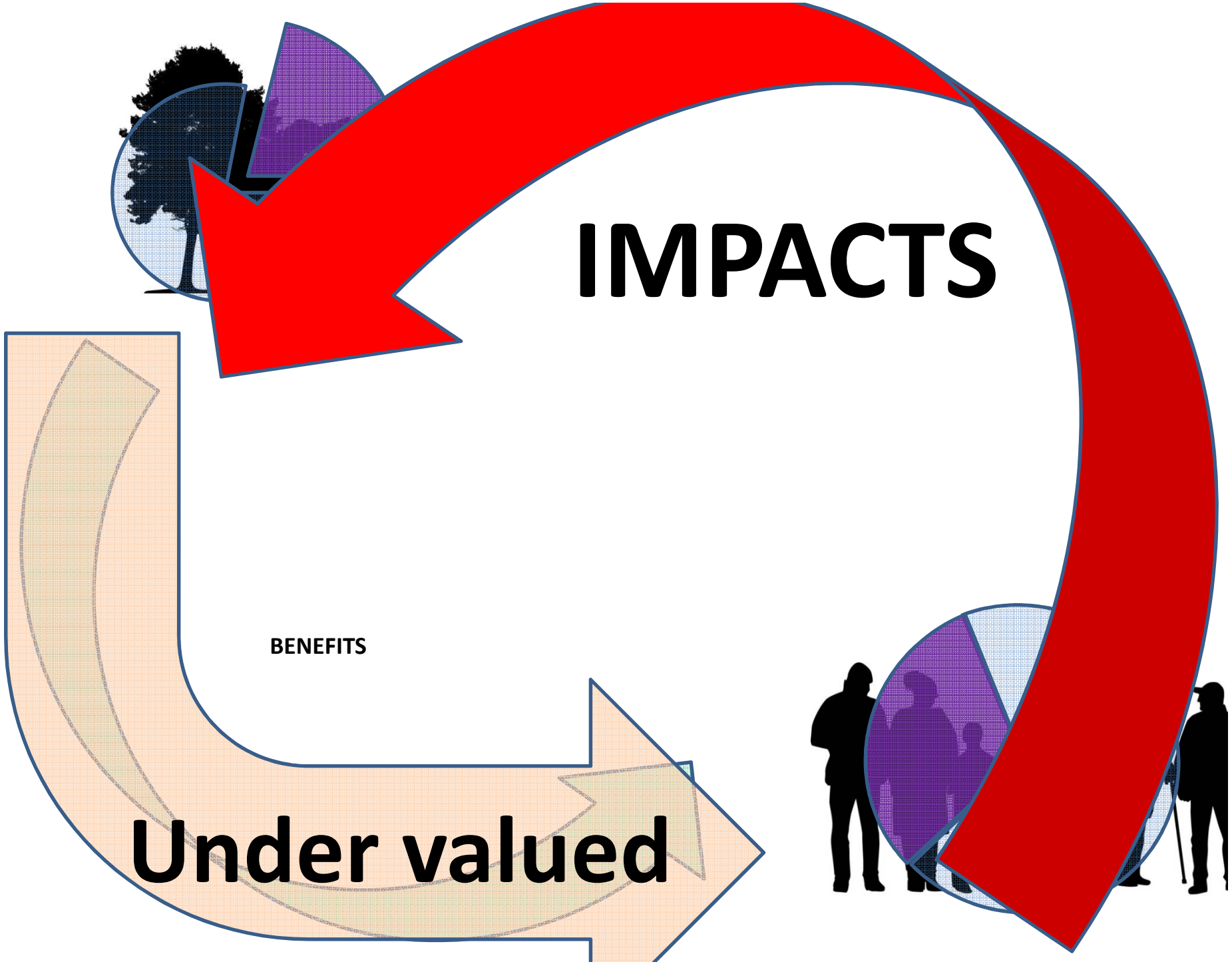
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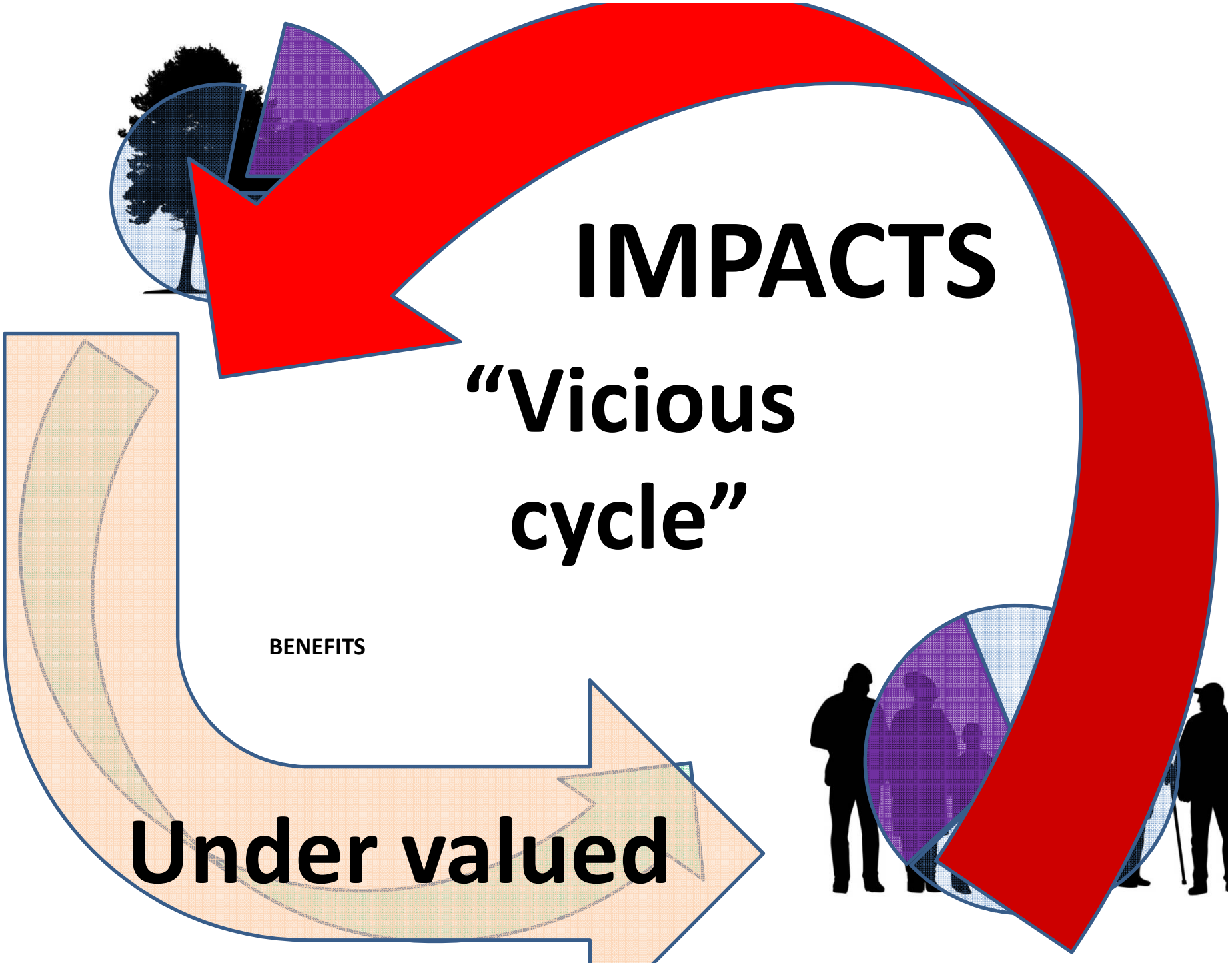
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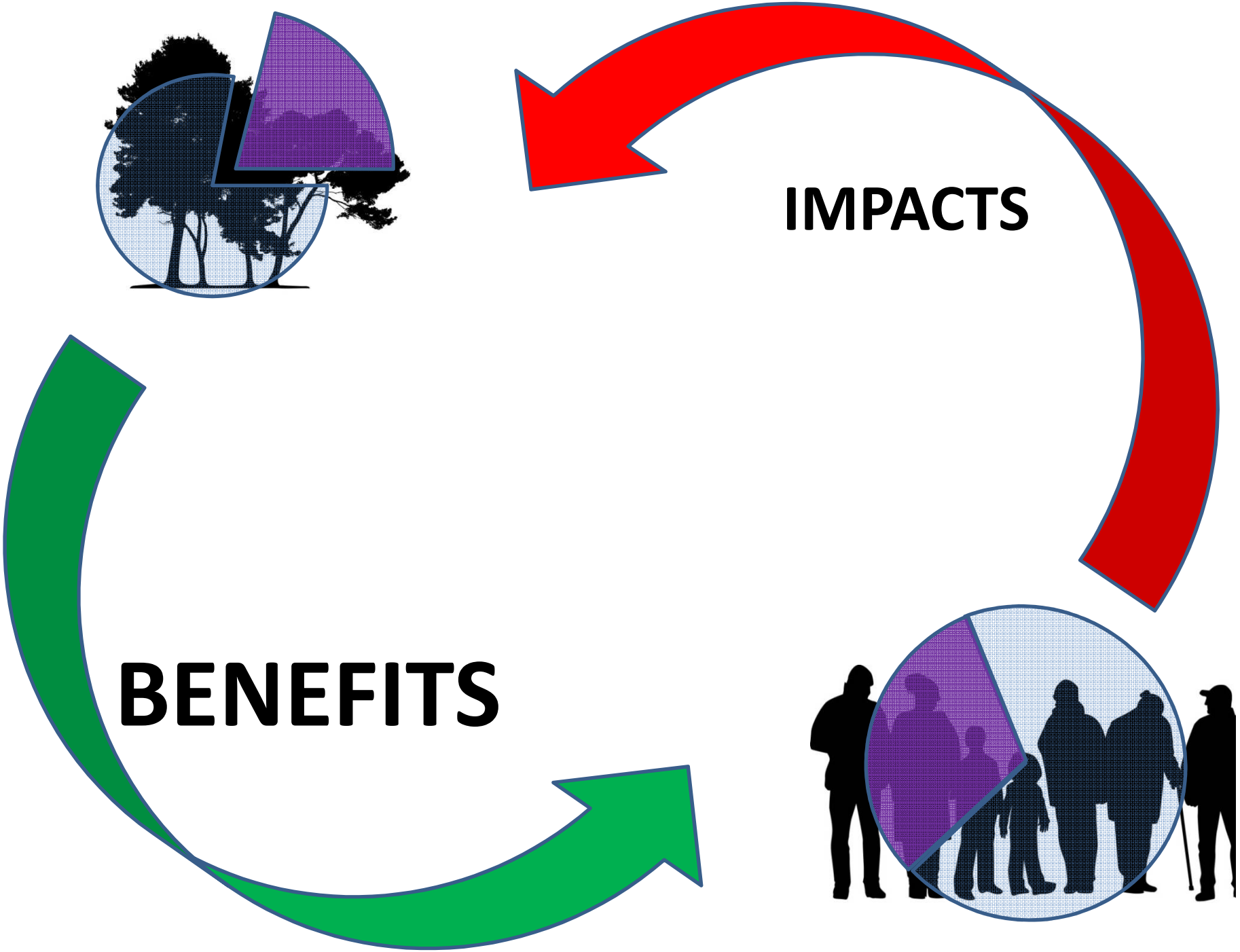
"Vicious cycle"
BENEFITS
Under valued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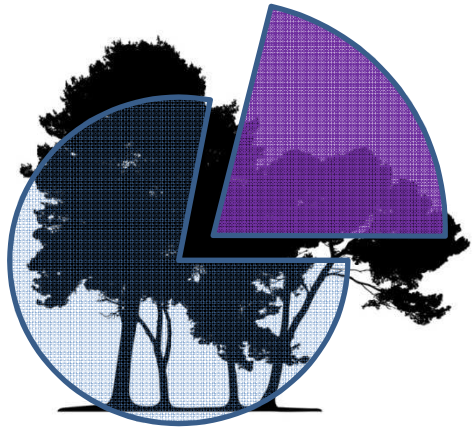

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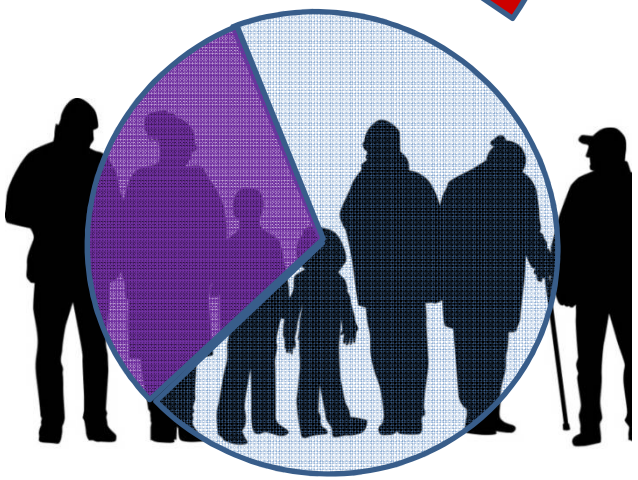
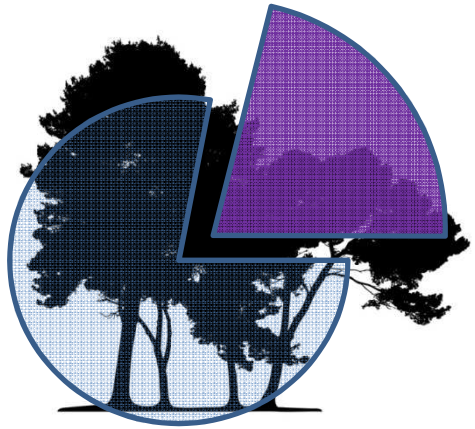
BENEFITS

Fully valued





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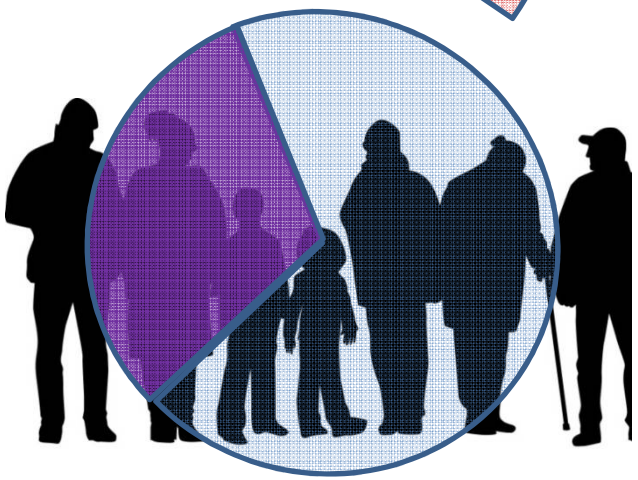

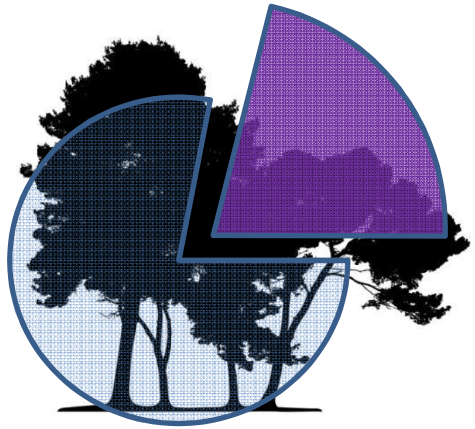

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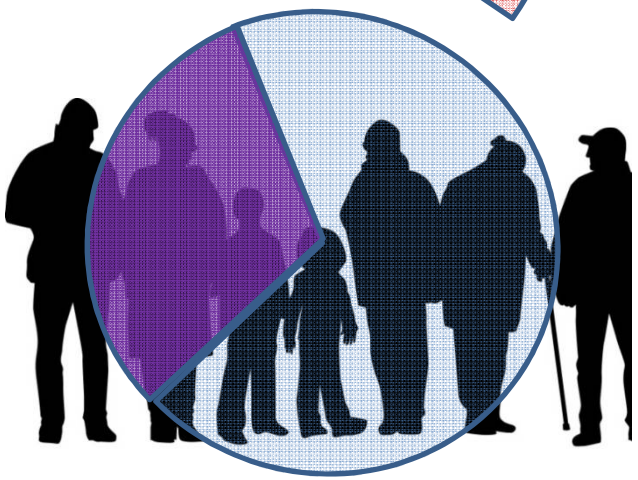
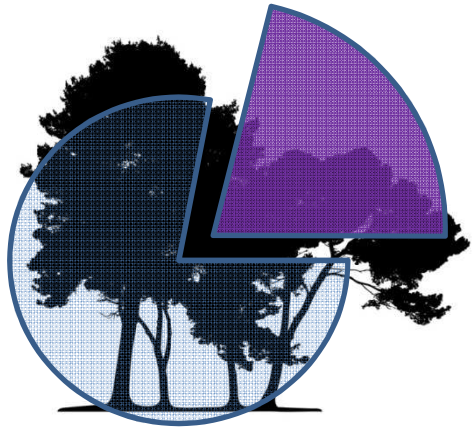


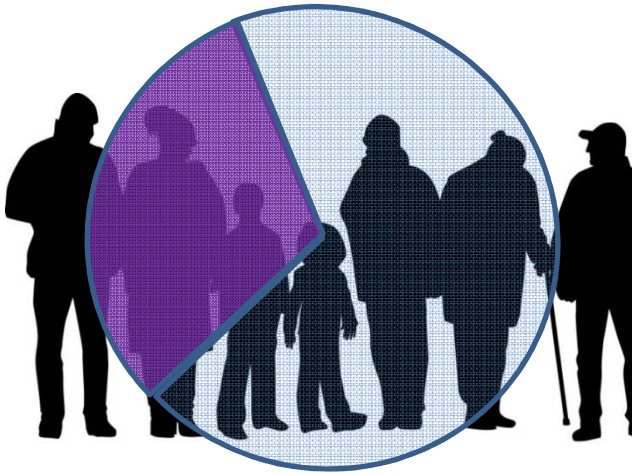


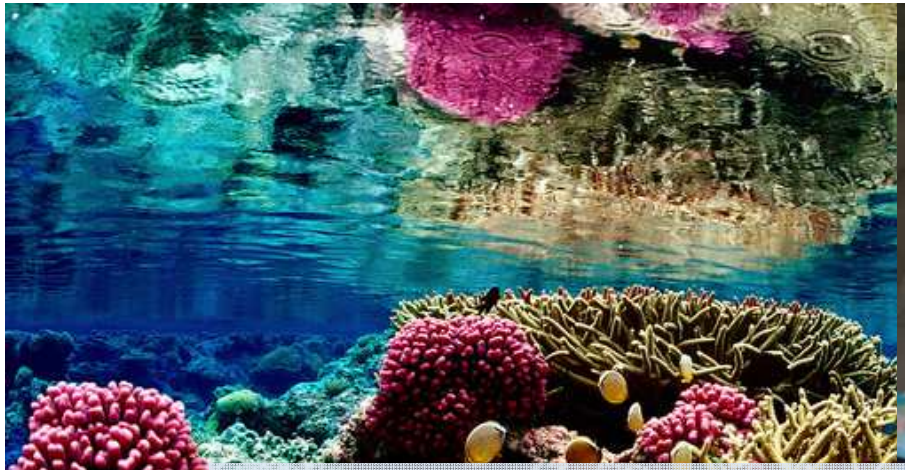
IMPACTS

"Virtuous cycle"

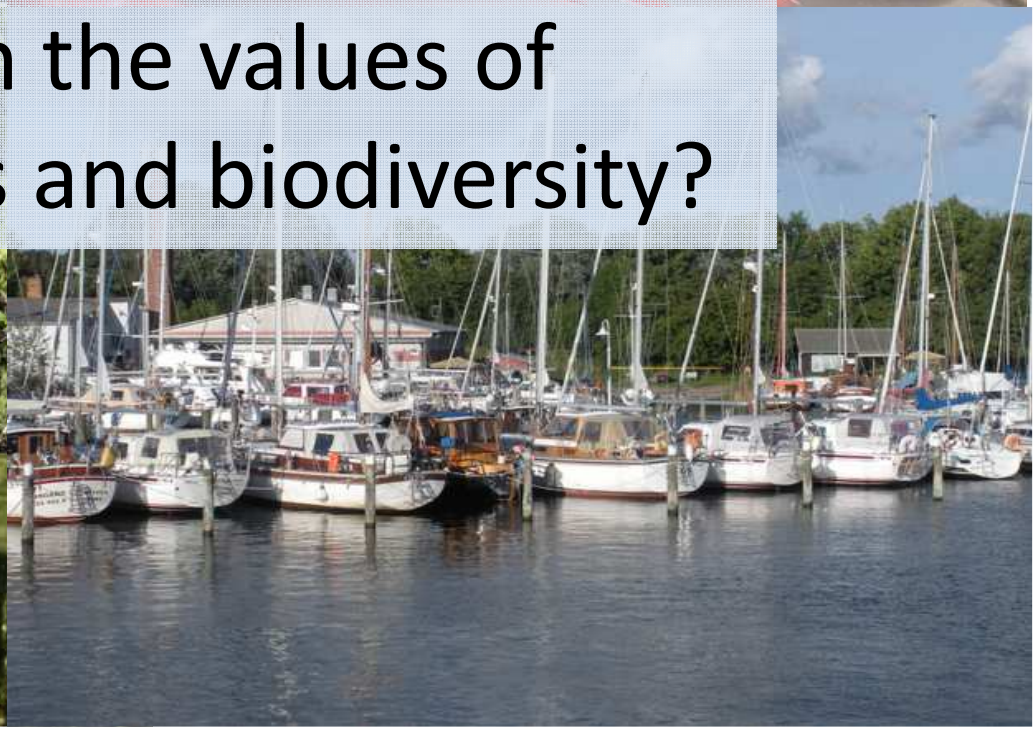
BENEFITS

Fully valued





… Under what circumstances is it important to assess and mainstream the values of protected areas and biodiversity?



…when there is a problem caused by undervaluation!

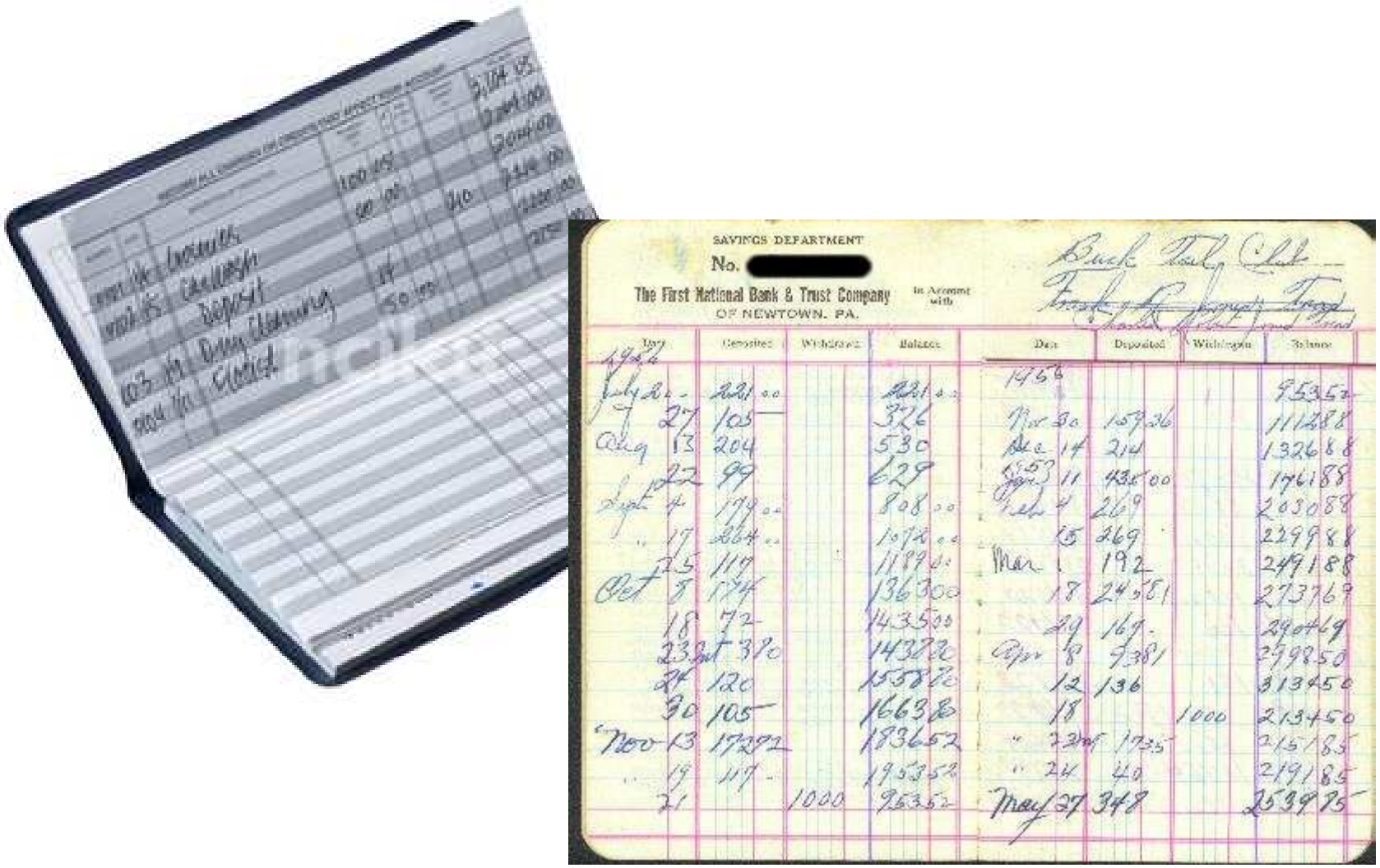
Examples of undervaluation:

1. A road is planned through a large protected area
2. Headwater forests are being degraded
3. Wetlands are being drained and mangroves are being cut down
4. Rivers are being polluted from agricultural waste
5. Illegal fishing is occurring within protected areas
6. There is sand mining allowed on protected beaches
7. A protected area is planned for degazettement

BUT…protected areas are not ATM machines

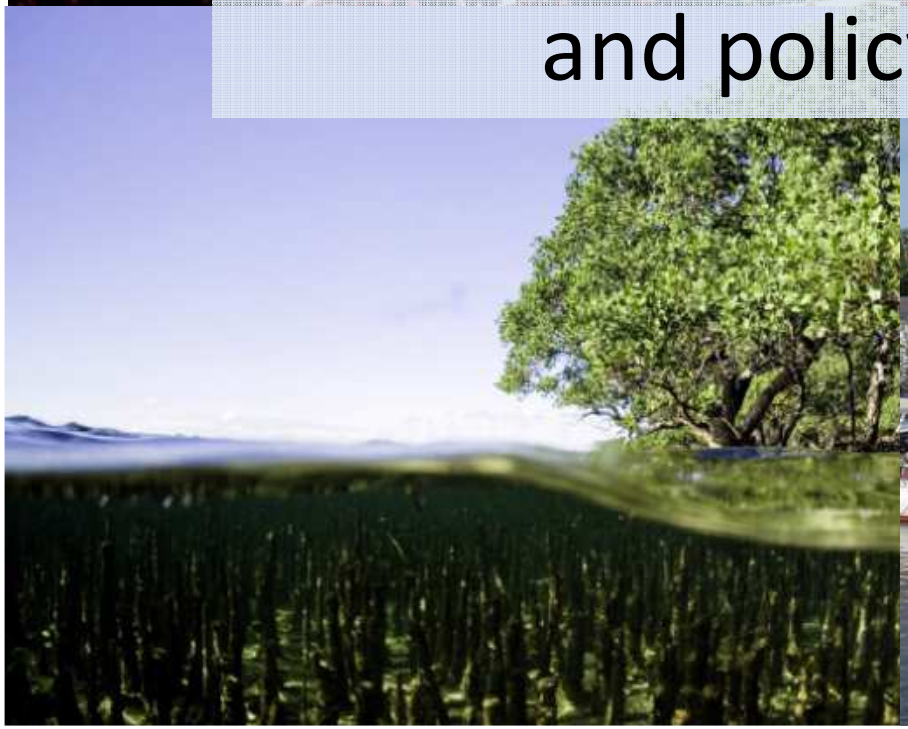
And protected areas are not piñatas…

Protected areas are a societal investment



Economic valuation reveals the hidden benefits of societal investments in biodiversity protection…

…which leads to better economic and policy decisions



Steps in Assessing Protected Area Values

1. Clearly define the context
2. Choose which benefits and services are included
3. Choose valuation method and indicators
4. Gather data
5. Analyze the economic and social benefits
6. Communicate the results to key decision makers
7. Identify and implement policy and economic instruments instruments

STEP 1

Clearly define the context

STEP 1

Clearly define the context

STEP 1

Clearly define the context:



Problem that valuation will solve: Existing levels of protection (.2%) and existing management are insufficient to sustain saiga populations, upon which major ecosystem services, livelihoods and human wellbeing depend

STEP 2

Choose which benefits, goods and services are included

STEP 2

Choose ecosystem benefits and services that:

- Are **associated with key national goals**, such as poverty reduction
- Are **easy to measure**, have **clear indicators** and **available data**
- Are **easy to communicate** to key stakeholder groups
- Have the **highest economic values**
- Are the **most important benefit** across an entire ecosystem or protected area system

STEP 2

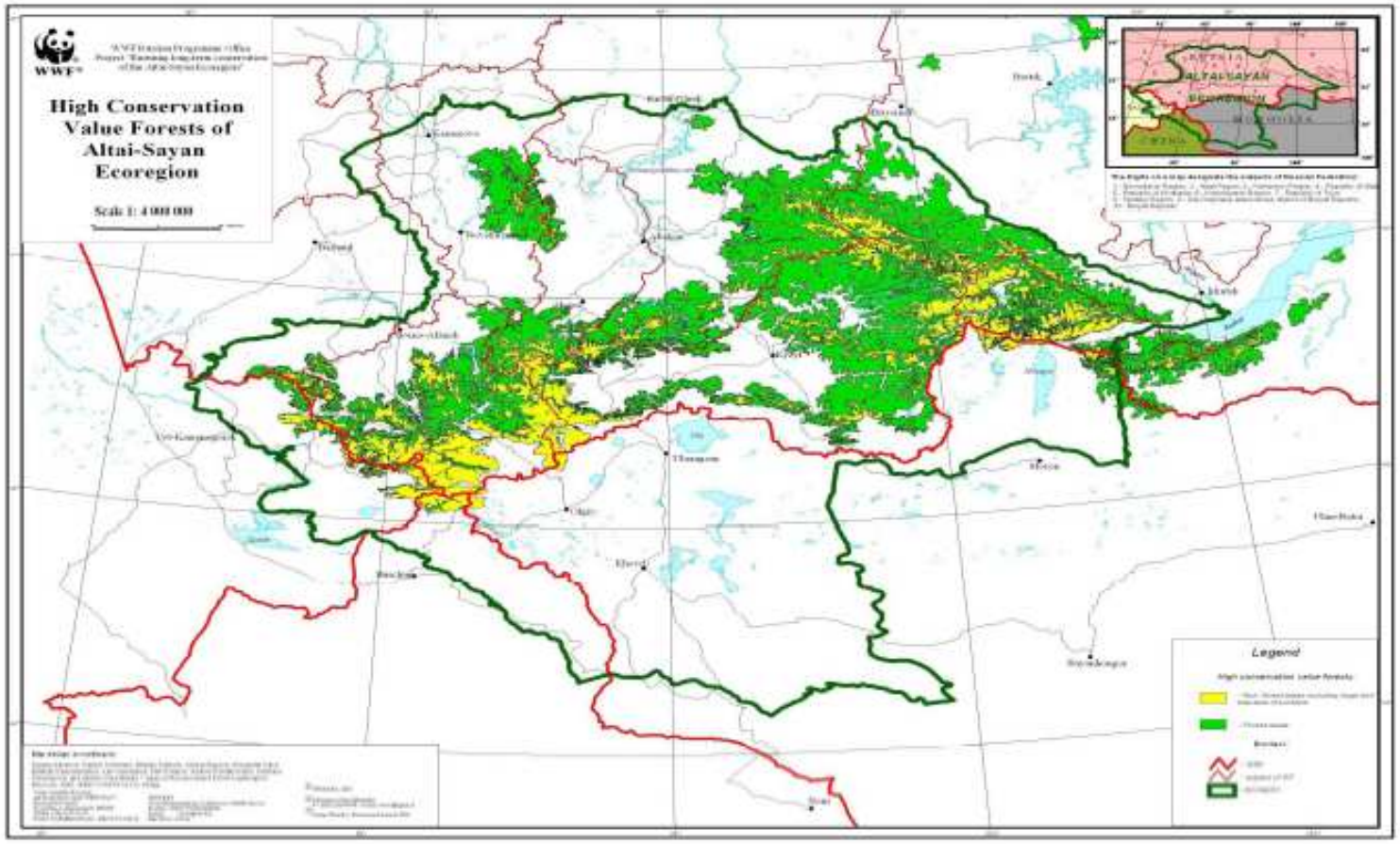
Choose which benefits, goods and services are included

Sustainable livelihoods and subsistence

STEP 2

Choose which benefits, goods and services are included

Carbon storage: 3.21 billion tones of Carbon



STEP 3

Choose a valuation method…

- Market price
- Replacement cost
- Costs avoided
- Net factor income
- Willingness to pay
- Contingent valuation
- Value comparison study

STEP 3

…and develop measurable indicators

Ecosystem service	Potential Indicator
Food security	• Average protein intake per person
Health	• # and % of people using medicinal plants
Fisheries	• List and volume of annual catch • # of people employed • Total $US added to economy
Disaster mitigation	• Hectares of avoided erosion • # of people protected from flooding
Water supply	• Volume (cubic meters/second) from PAs • Hectares irrigated • Energy in megawatts from hydropower

STEP 4

Develop measurable indicators

- Number of families who rely on grazing
- Value of livestock that depends on grassland

STEP 4

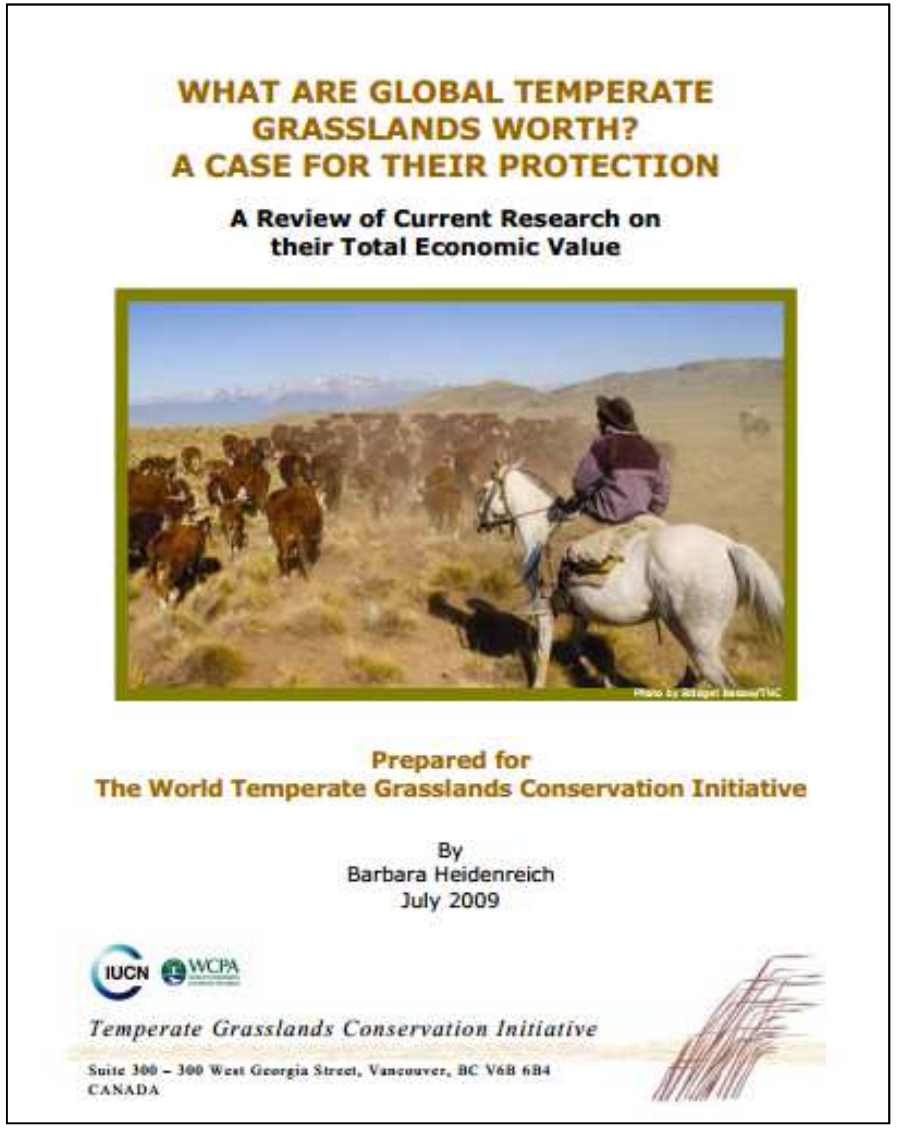
Gather data: through community meetings, surveys

STEP 5

Analyze the social and economic benefits

- **DIRECT USE VALUES**:
  Pastoralism: $US 20/ha
  Recreation: $US 18/ha
- **INDIRECT USE VALUES**:
  Wildlife watching: $20 – 120
- **ECOSYSTEM SERVICES**:
  Provision of clean air: $US 12
  Climate regulation: $US 213
  Water regulation: $US 7
  Pollination: $US 32 – 1190

TOTAL = $US 190 – 1618/hectare



STEP 6

Communicate the results to key decision makers

Simple

Powerful

Actionable

Surprising

Targeted

Iconic

Concrete

STEP 6

Communicate the results to key decision makers

Meetings were held with a wide variety of stakeholders from across Kazakhstan

Step 7: Establish mechanisms: Creating or modifying policies and plans

- Reform or create policies, plans, laws
- Create protected areas, buffer zones, corridors
- Modify management plans and practices
- Incorporate into strategic environmental assessments (SEAs)
- Incorporate into spatial and land-use planning

Step 7: Establish mechanisms: Economic instruments, education, partnerships

- Public-private partnerships
- Market-based certification
- Voluntary best practices
- Payments for ecosystem services
- Communication, education
- Biodiversity offsets

Step 7: Establish mechanisms

1. **IDENTIFY and ASSESS** the full range of ecosystem services and people affected

2. **ESTIMATE and DEMONSTRATE** the value of ecosystem services

3. **CAPTURE** the value of ecosystem services and seek **SOLUTIONS**

TEEB. 2010. The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature.

STEP 7

Identify and implement the policy or finance mechanisms

Kazakhstan 'steppes' up protection of endangered antelope

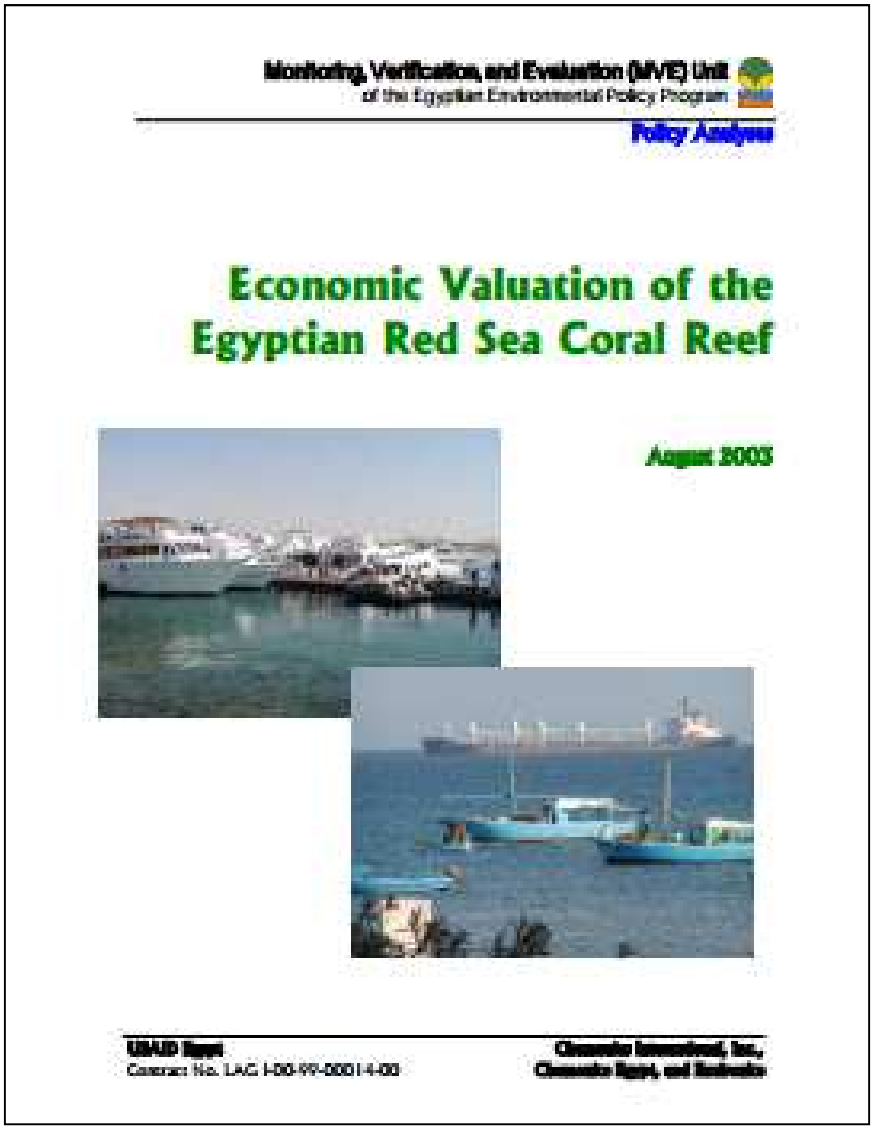
Mar 2007. Almaty, Kazakhstan – A new nature reserve in north-western Kazakhstan will protect unique wetlands and habitats of rare saiga antelopes that inhabit the country's famous steppes.

More than 93% of the Irgiz-Turgay nature reserve, with an area of 763,549 hectares, will become a protected pasture for wild ungulates, including saiga antelope. 'This large reserve is an important step in

achieving our goal of creating a system of protected areas of more than 6 million hectares, particularly for rare ungulates and birds,' says Tatyana Bragina, Coordinator of the Altyn Dala Conservation Initiative.

Kazakhstan agreed to a goal of establishing 6 million hectares of **new protected areas** in key Saiga habitat by 2030

Case study: Red Sea Coral Reefs of Egypt



Step 1: Understand the context

In 2000, a total of 5.1 million foreign tourists visited Egypt.

Around half of these came to enjoy the Red Sea and Gulf of Aqaba coastlines.

Step 1: Understand the context: What is the problem that valuation will solve?

61% of the coral reefs of Egypt were seriously at risk from human impacts…

…and over 40% of dive sites have less than 30% coral.

Coastal Development

Ship groundings, ballast and pollution

Commercial and artisanal over-fishing

Step 2: Identify the ecosystem services

STEP 2: Choose ecosystem benefits and services

In 2000, a total of 5.1 million foreign tourists visited Egypt.

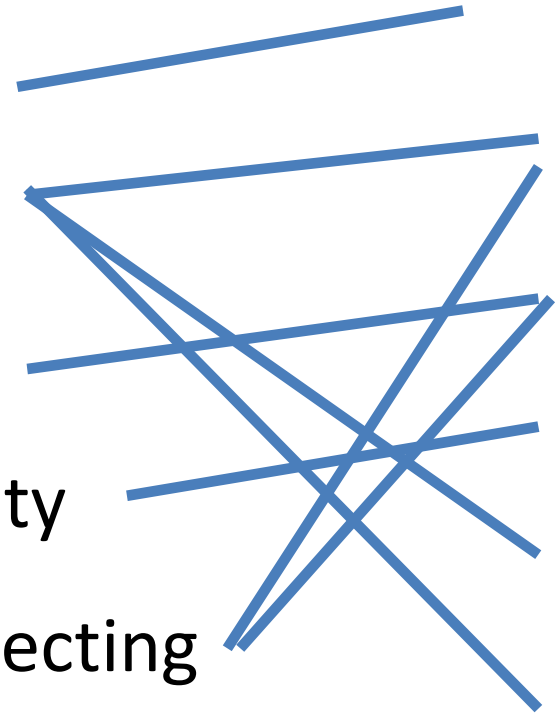
Around half of these came to enjoy the Red Sea and Gulf of Aqaba coastlines.

Step 2: Choose the ecosystem services

- Tourism
- Fisheries
- Research
- Biodiversity
- Bio-prospecting

STEP 3: Choose valuation method for each ecosystem service and choose indicators

- Tourism
- Fisheries
- Research
- Biodiversity
- Bio-prospecting



- Travel cost method
- Contingent valuation
- Net present value
- Benefit transfer
- Market value/price
- Change in productivity

Step 4: Gathering data

Step 4: Gathering data -- surveys

Annex 5: Snorkelers and Divers Questionnaire for the Marsa Alam Area

To be filled in by interviewer:
location of interview.....
live aboard/ resort and name.....
date of interview.....

1. Visitor's recreational behavior

1- During the past year, how many times did you visit this location?
1. Once 2. Twice 3. 3-4 times 4. more than 4 times

2- How many times did you visit other natural areas in Egypt?
1. None 2. Once 3. Twice 4. 3-4 times 5. more than 4 times

3- How many times did you visit other natural areas in other countries?

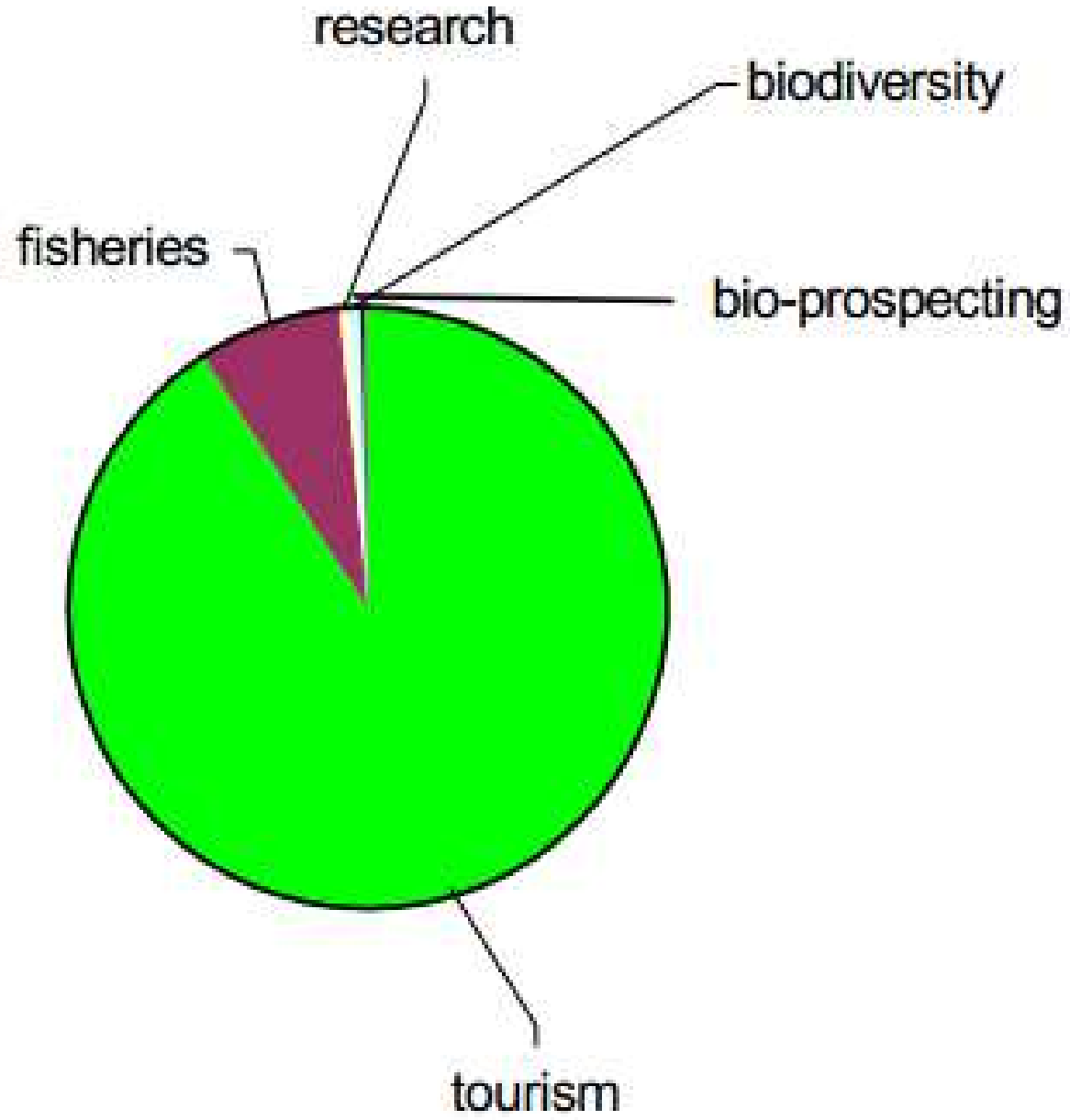
1. None 2. Once 3. Twice 4. 3-4 times 5. more than 4 times

4- What is the main purpose of your natural areas vacation?
1. Diving 2. Snorkeling 3. Desert Activities
4. Relaxation 5. All of the above 7. Other ……..

STEP 5: Analyze benefits

Sharm el Seikh: 36.2$ from reef-based tourism

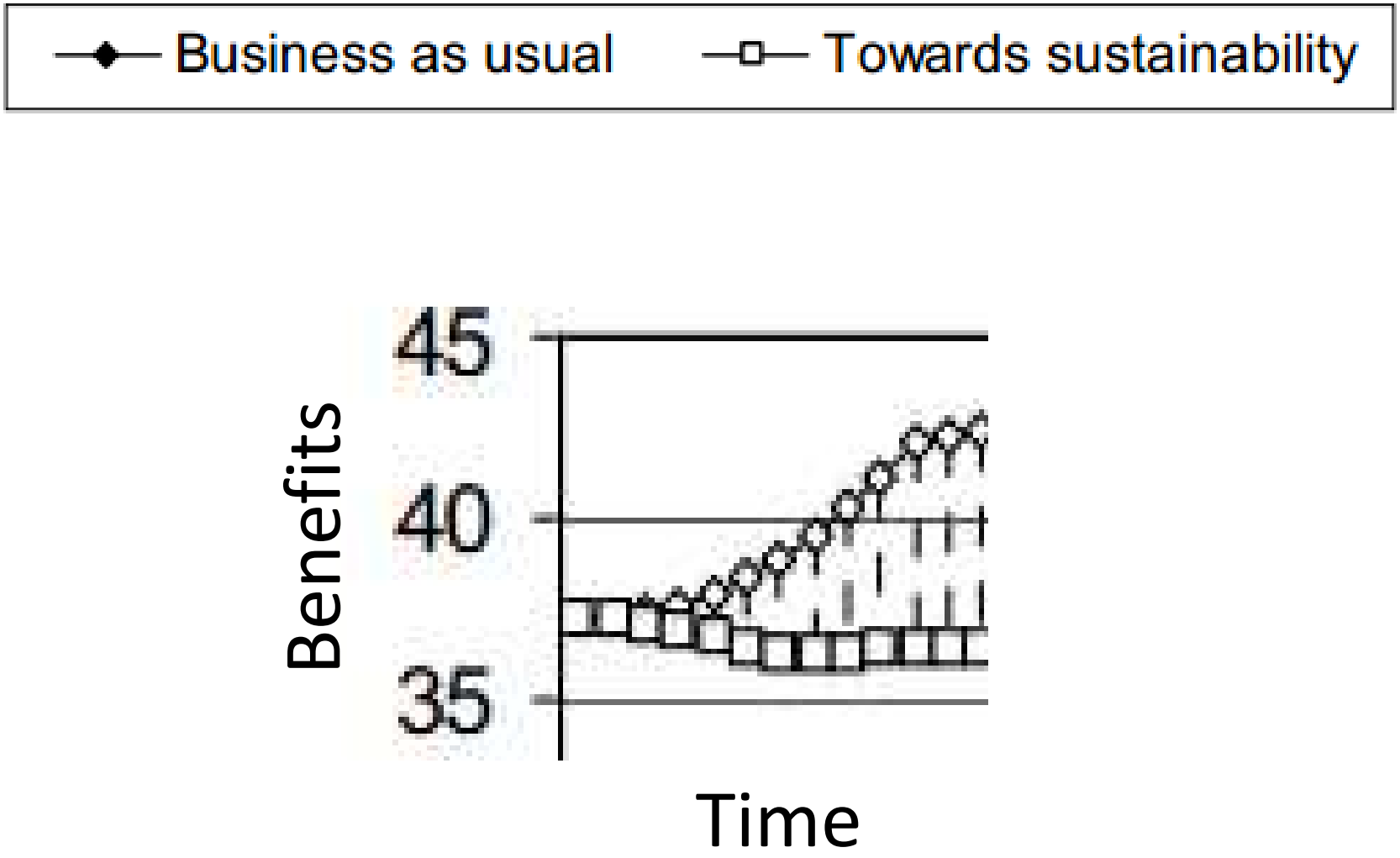
Step 5: Analyze benefits



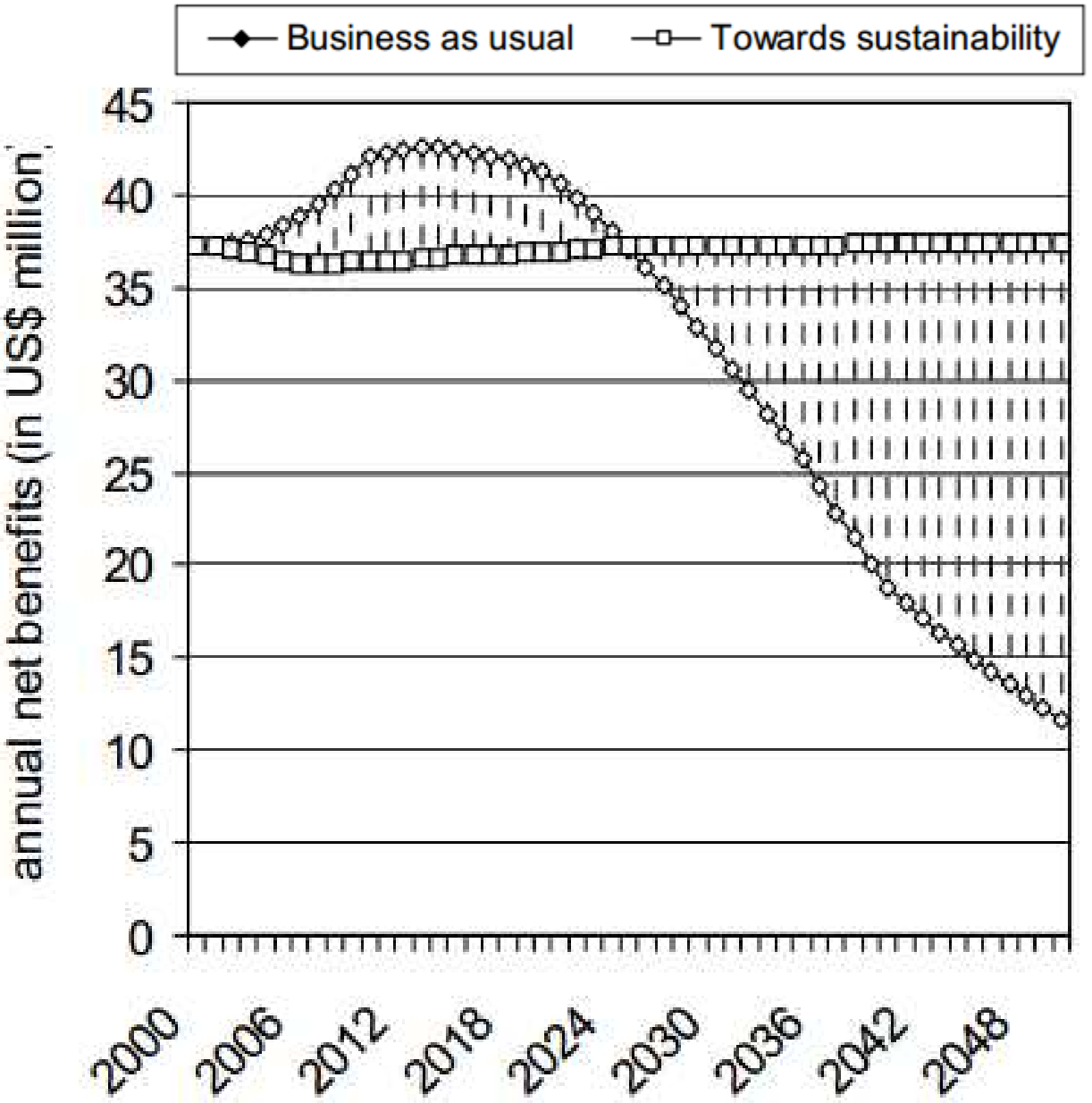
Total value of reef-based tourism was $116 mm (2000)

Step 5: Analyze benefits

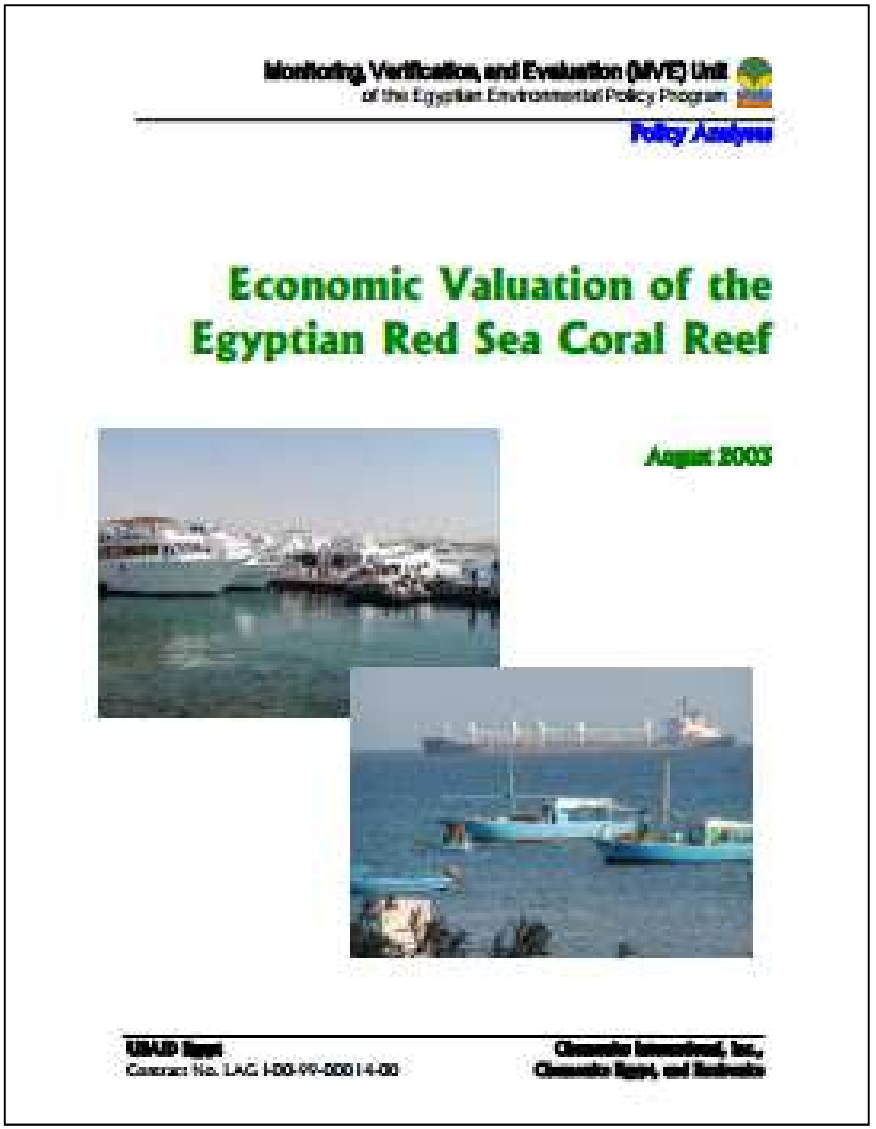
Sharm el Seikh costs and benefits



Sharm El Sheikh

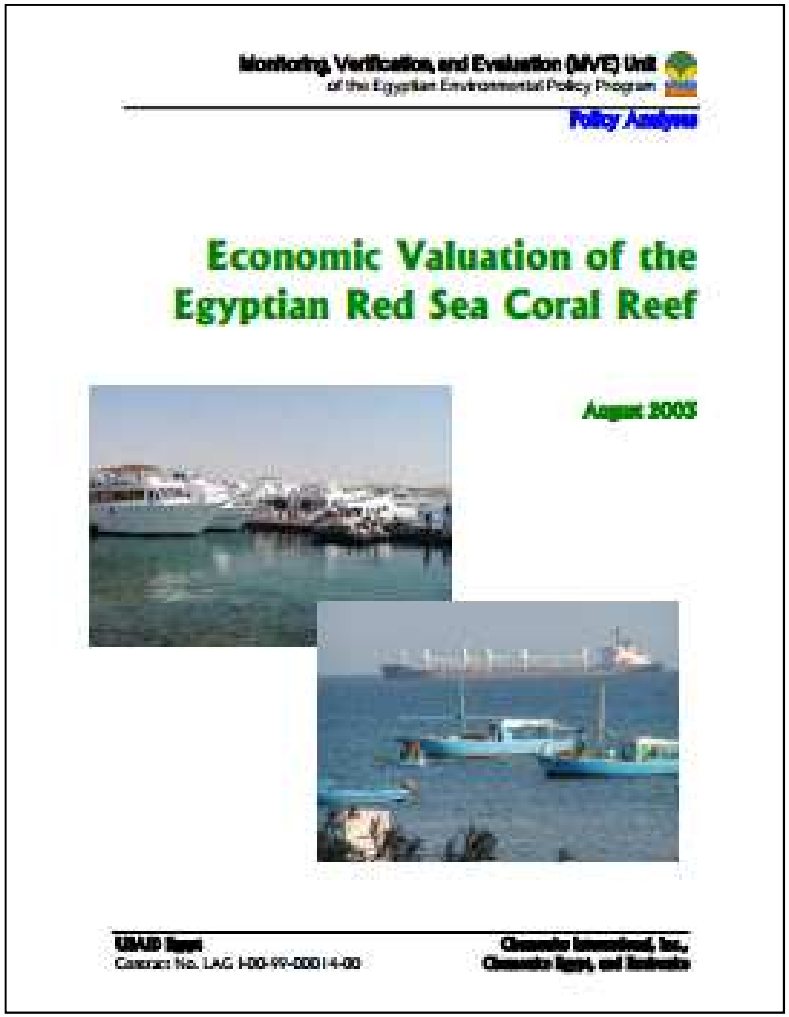


STEP 6: Communicate the results



Report

Step 7: Establish mechanisms for economic and sectoral integration



- **Change management practices**
  - Limit the number of divers
- **Change economic instruments**
  - Increase diving fees
- **Change sectoral practices**
  - Ballast practices
  - Coastal development mitigation

Protected area valuation

Aims to place protected areas into economic decision-making frameworks…

Protected area valuation

…in other words, to place protected areas on the radar screen of major decision makers…

Mainstreaming and integration

…in order to make better societal decisions.

Exercise

1. What is an protected area problem in your region that valuation can help to solve?
2. What are the ecosystem services that are most important and feasible to include?
3. What are the most effective communication mechanisms?
4. What are the most important mechanisms for integrating the protected area values into society?