Transactional Environmental Support System

www.tess-project.eu

# A Transactional Environmental Support System for Europe:

## Why, What, and How

Stratos Arampatzis, Tero Ltd



2007 - 2013

TESS
Transactional Environmental Support System

# Why: formal systems cannot easily reach to the individual manager

- Europe is losing biodiversity and ability to provide ecosystem services.
- Formal Environmental Assessment processes give some protection and guidance.
- However, individual local stakeholders who manage land and species also make daily informal decisions based mainly on local environments.
- These myriad small decisions summate to change land use and the state of our environment.

# Why: Convention on Biological Diversity

**Article 10: Protect & encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.**

**Article 11: Adopt economically and socially sound measures that act as incentives for conservation and sustainable use of components of biological diversity.**

TESS
Transactional Environmental Support System

# Why: finances

**SPEND: (private)**

| Hunting | Angling | Watching |
|---|---|---|
| 16 billion | 19 billion | 8 billion |

**GEMCONBIO survey of hunting, angling, watching: 34 million adults (7% population) spend >€40 billion.**

- In 2006, equivalent US spending was $120 billion
- €40 billion is about €200 for each cultivated EU ha
- CAP budget €57 billion a year, <20% agri-environment
- It costs €6 billion to run Natura 2000 (17% of EU)

TESS
Transactional Environmental Support System

# What: An exchange between local stakeholders & central policymakers

## Decision support for managers of land and species: Councils, Farmers, Foresters, Reserve managers, Anglers, Hunters, Access Interests

1. What does central policy and planning have?
   Capability to produce complex knowledge.
2. What does central policy and planning need?
   Local knowledge and local actions.
3. What do local managers of land & species have?
   Local knowledge & capabilities (skill, cash, time).
4. What do local managers of land & species need?
   Complex knowledge to guide their actions.

TESS
Transactional Environmental Support System

# What: TESS vision

We seek to complement formal environmental assessment with an internet-based Transactional Environmental Support System (TESS) that:

(a) will make it easy for policy makers to integrate local knowledge into their decision making, while

(b) guiding and encouraging local activities that restore and maintain biodiversity and ecosystem services.

Our vision is to enlighten, encourage and empower local communities to support biodiversity restoration across Europe.

# What: TESS functions

TESS:

(a) collates multiple ways to leverage biodiversity enhancement, uses models to predict economic & biodiversity impacts of small-scale actions, and delivers context-adaptive decision support, so that local people can optimise incomes from ecosystem services, in exchange for

(b) information on their decisions, and monitored results, which integrate to support decisions of central assessors for adaptive governance (regulations & fiscal incentives).

TESS
Transactional Environmental Support System

# What: Exchanging decision-support for local knowledge and actions

| SCALE | CONTEXT / QUESTION | OPERATION MODE |
|---|---|---|
| **Field**<br>individual | **! BEEP !**<br>HARRIER NEST AHEAD<br>Divert harvester for 20 meters | *Map on communication device with GPS-auto-location capability.* |
| **Farm**<br>individual | If I use my land like this in future, what happens to my income, game bags and nitrate run-offs? | *Auto-guides on farm plan: optimizing game, fishing and farm income.* |
| **Village**<br>community | How do we route this path to optimise views while minimising erosion and wildlife disturbance? | *Headland mapping GIS: walking (pay-parking), horse-riding (licence).* |
| **Higher govern-ment** | If trends in land-use continue for 20 years, how can we still meet planned biodiversity targets? | *Scenario: model subsidy payments for leveraging sustainable use activities.* |

TESS
Transactional Environmental Support System

# How: 14 partners/10 countries

| | |
|---|---|
| 1 | Aristotle University of Thessaloniki (Greece) Coordination |
| 2 | Bournemouth University (United Kingdom) |
| 3 | NERC Centre for Ecology & Hydrology (United Kingdom) |
| 4 | Anatrack Ltd (United Kingdom) |
| 5 | Ordenamento e Gestão de Recursos Naturais (Portugal) |
| 6 | Tero Ltd (Greece) |
| 7 | European Sustainable Use Specialist Group of IUCN (Belgium) |
| 8 | Federation of Associations for Hunting and Conservation of the EU |
| 9 | Pro-Biodiversity Service (Poland) |
| 10 | Centre for Cartography of Fauna and Flora (Slovenia) |
| 11 | Szent Istvan University (Hungary) |
| 12 | Tallinn University of Technology (Estonia) |
| 13 | Danube Delta National Institute for R&D (Romania) |
| 14 | WWF Turkey (Turkey) |

# How: TESS work packages

Transactional Environmental Support System

0

**WP2**

**Central**

**Survey**

**Workshop & report**

12

**WP3**

**Local**

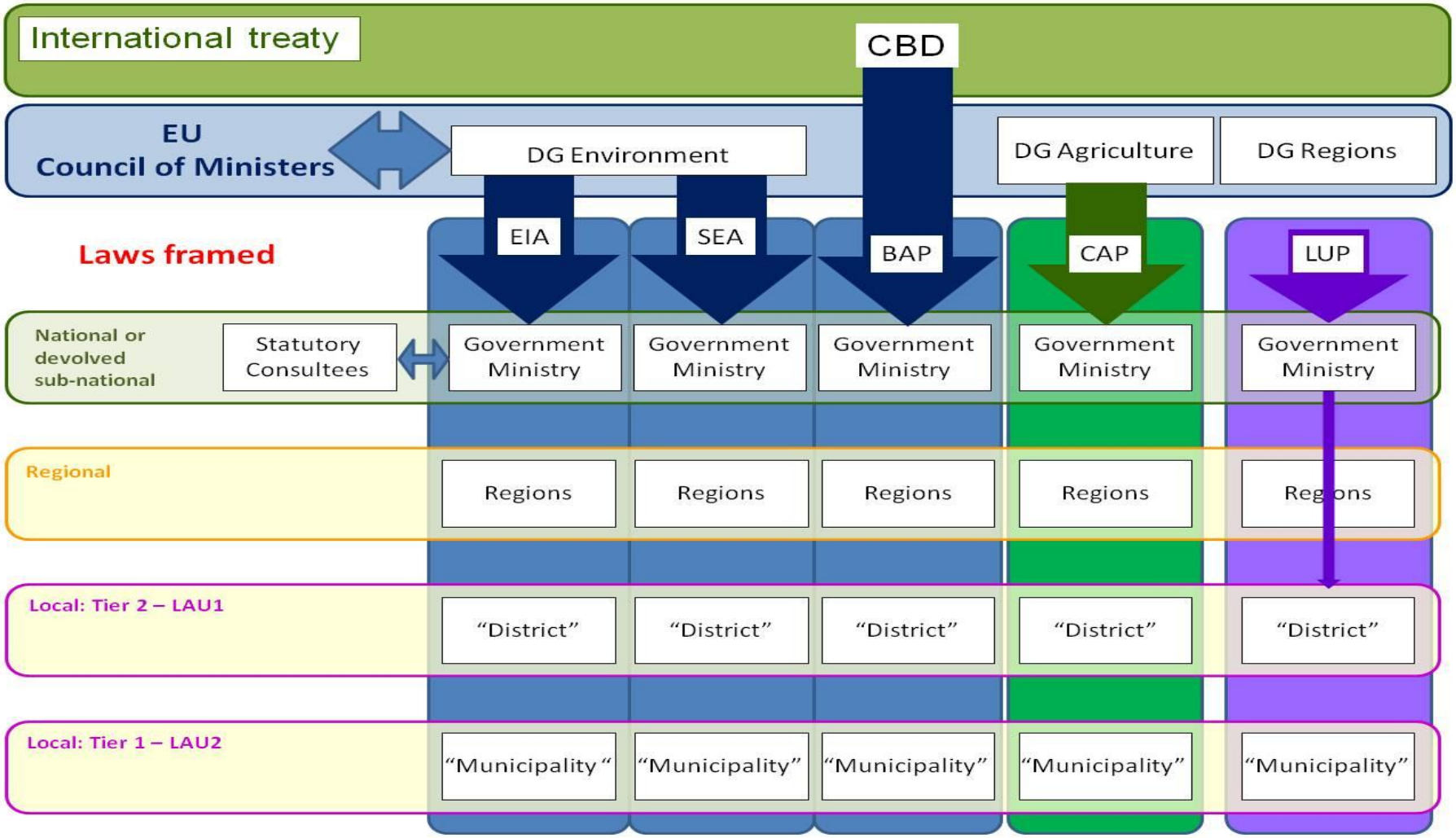
**Survey**

**Workshop & report**

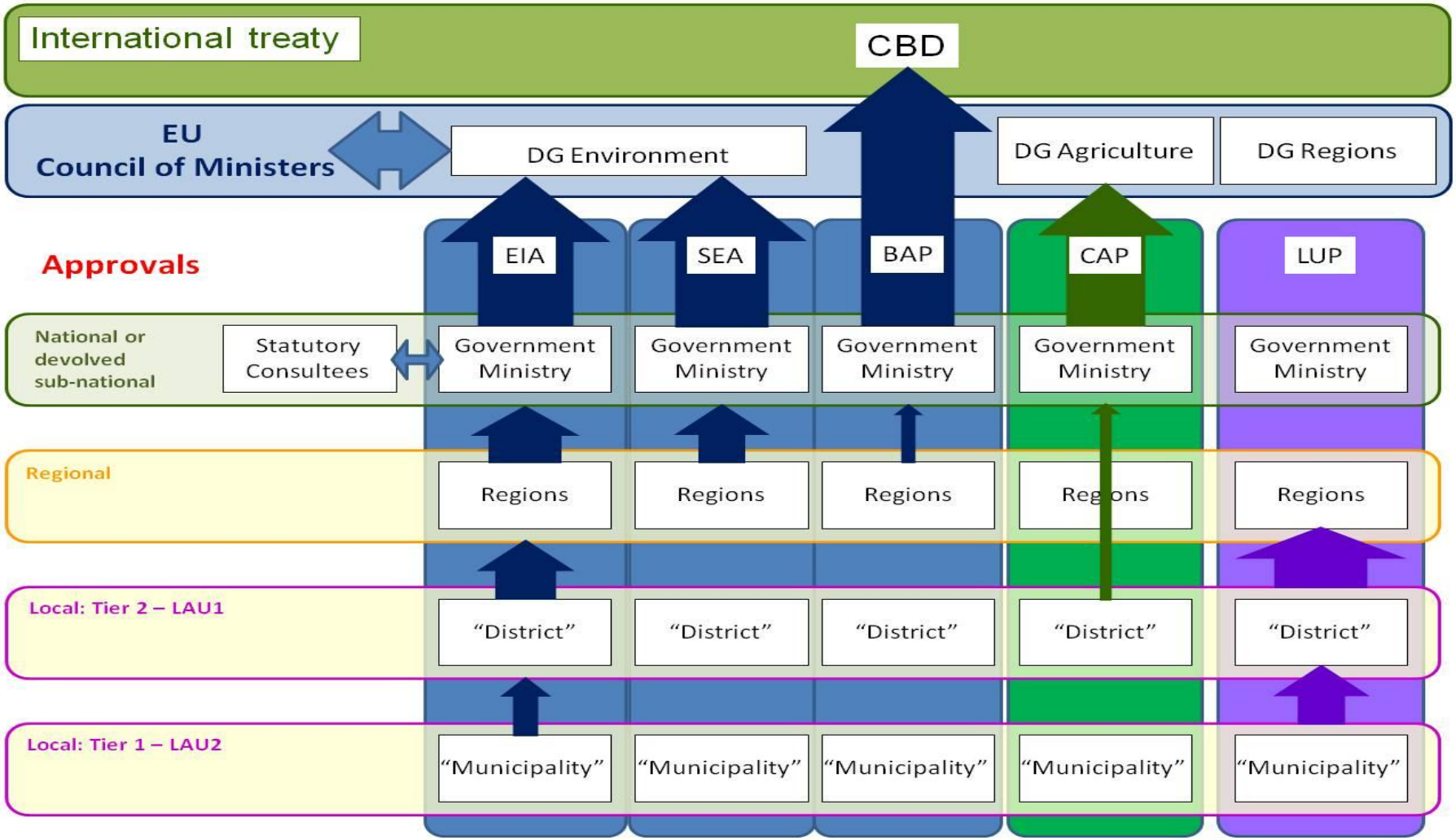
24

33

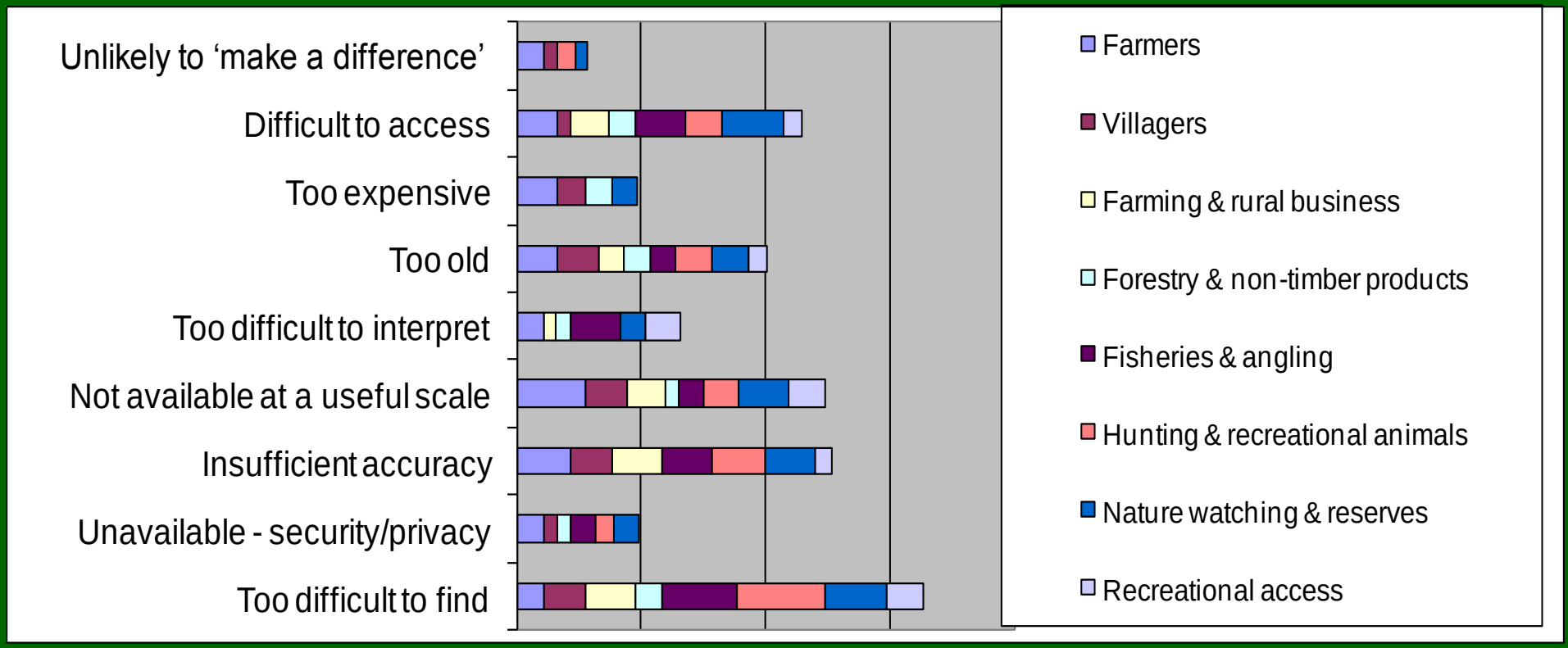
# WP2: Information flows (central to local)



# WP2: Information flows (local to central)



# WP3: Barriers in obtaining information for decisions

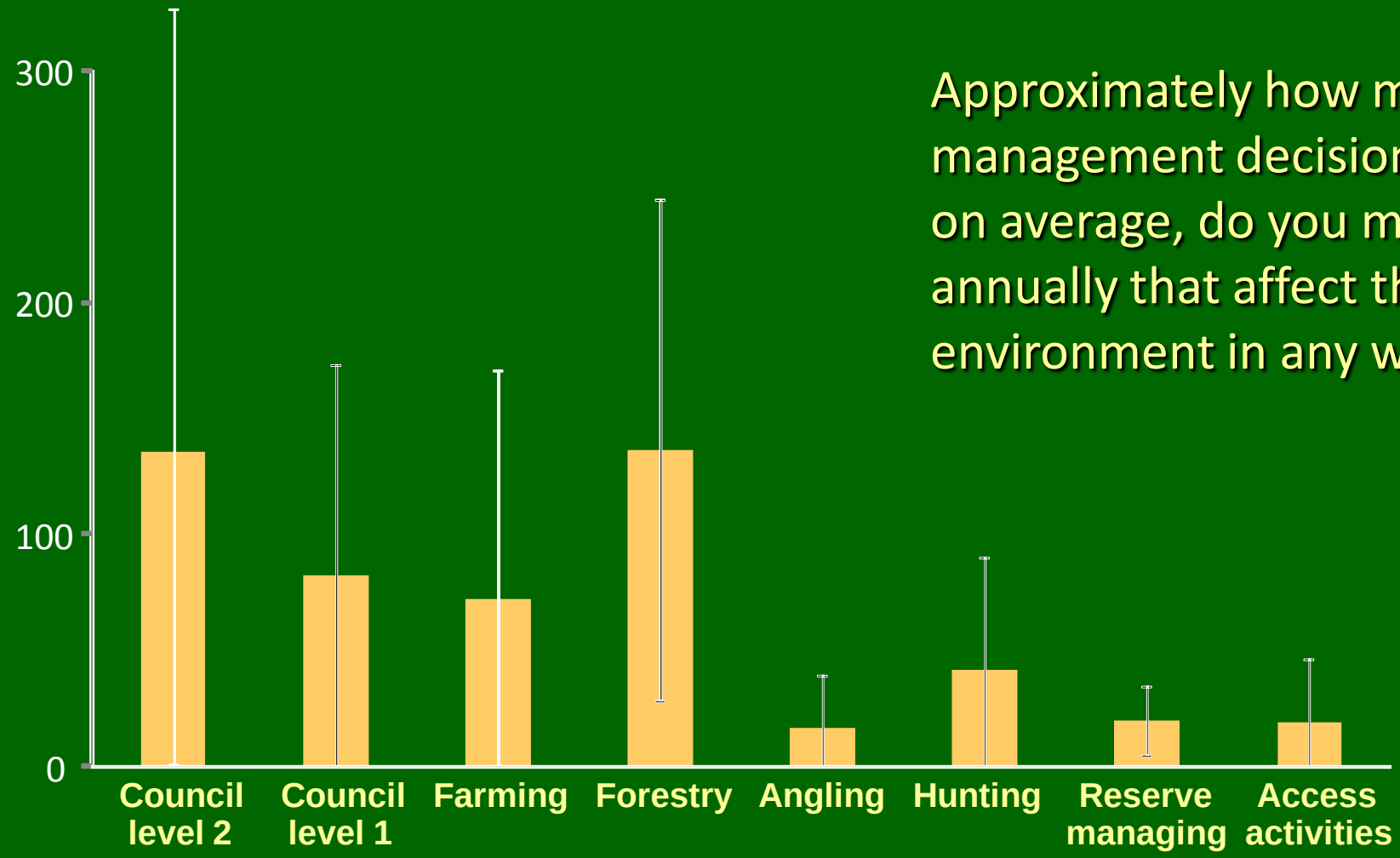



Each barrier was encountered by most of the stakeholders

Difficulty in finding information - major issue

Accuracy, scale, access & age – important

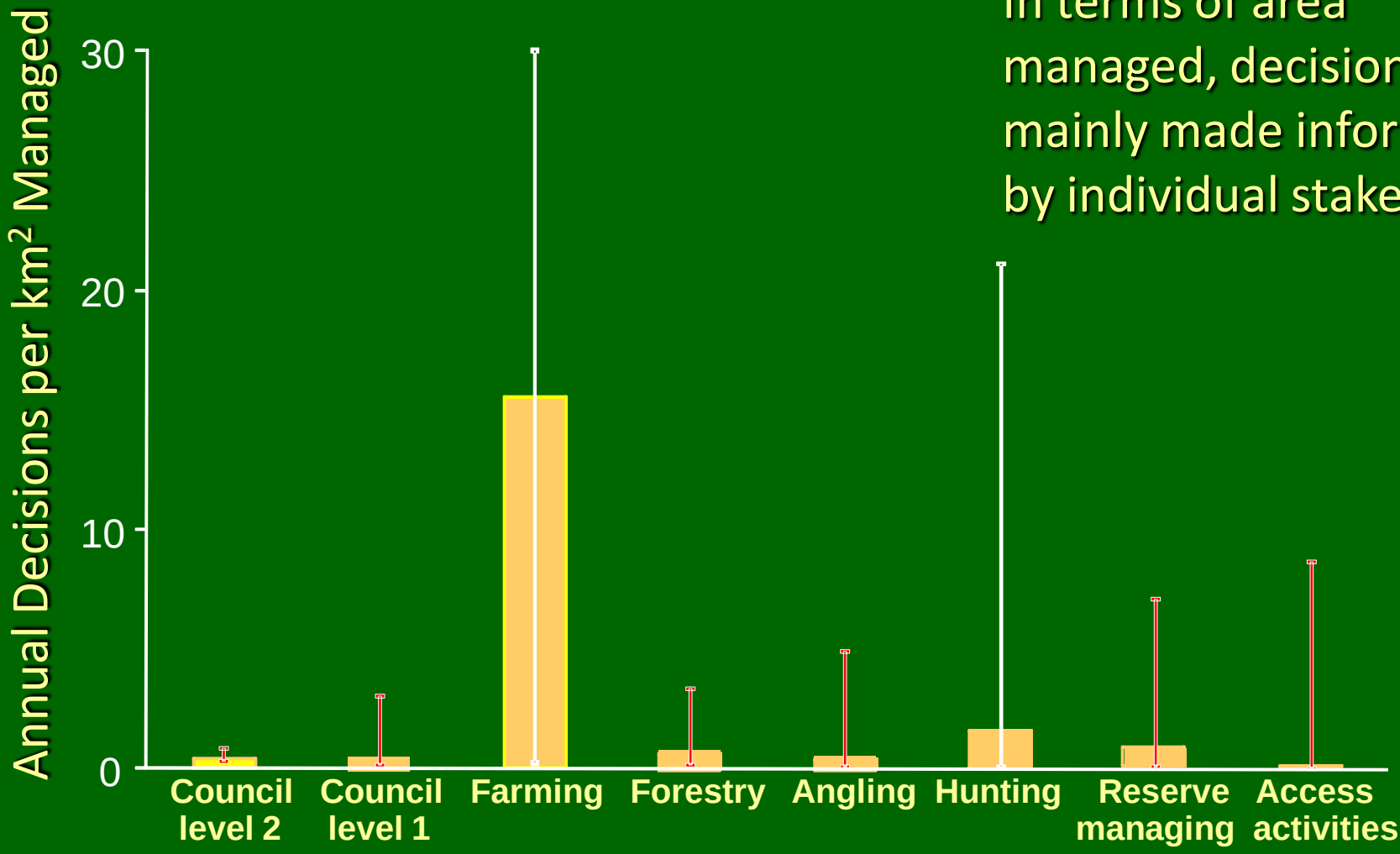
# WP2: Who makes local decisions?




Approximately how many management decisions, on average, do you make annually that affect the environment in any way?

TESS
Transactional Environmental Support System

# WP2: How do you make decisions?




In terms of area managed, decisions are mainly made informally by individual stakeholders

# How: TESS work packages

Transactional Environmental Support System

0

12

24

33

## WP2
**Central**
Survey

Workshop & report

## WP3
**Local**
Survey

Workshop & report

## WP4
**Models**
Audit of models

## WP5
**Case studies**
Socio-economic and mapping

## WP6
**Policy + Internet**
Policy guidelines

System design

# Thank you for listening

www.tess-project.eu