« ECONET - I »

WWF

Simulation game for regional sustainable development planning

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ЭКОНЕТ · ECONET

Introduction

- "EcoNet" is system dynamic based educational tool kit to train regional decision makers in the different regions of Russia. It dedicated to several actual environmental policy problems of Russian and Europe: biodiversity conservation, sustainable development planning, defragmentation actions etc. It includes 10 roles, GIS, 8 maps, soft (Excel Visual Basic and Delphi GIS) and provide possibility to run 30 years of coherent decision making: ecological, social, economy with 3 years steps. One of the side effect of the training is team building of the participants.

- In more advanced version it give practical chance to test this or that environmental policy/strategy in the region that more than 32 000 sq.km. The core of the model three interdependent sectors of development: ecosystems (natural, agricultural), social and economy that are modelled by system dynamic, GIS aid.

Region general characteristics

- The set of the special maps of Russia is presented to show the different context of decision making in each of 87 regions of Russian federation.
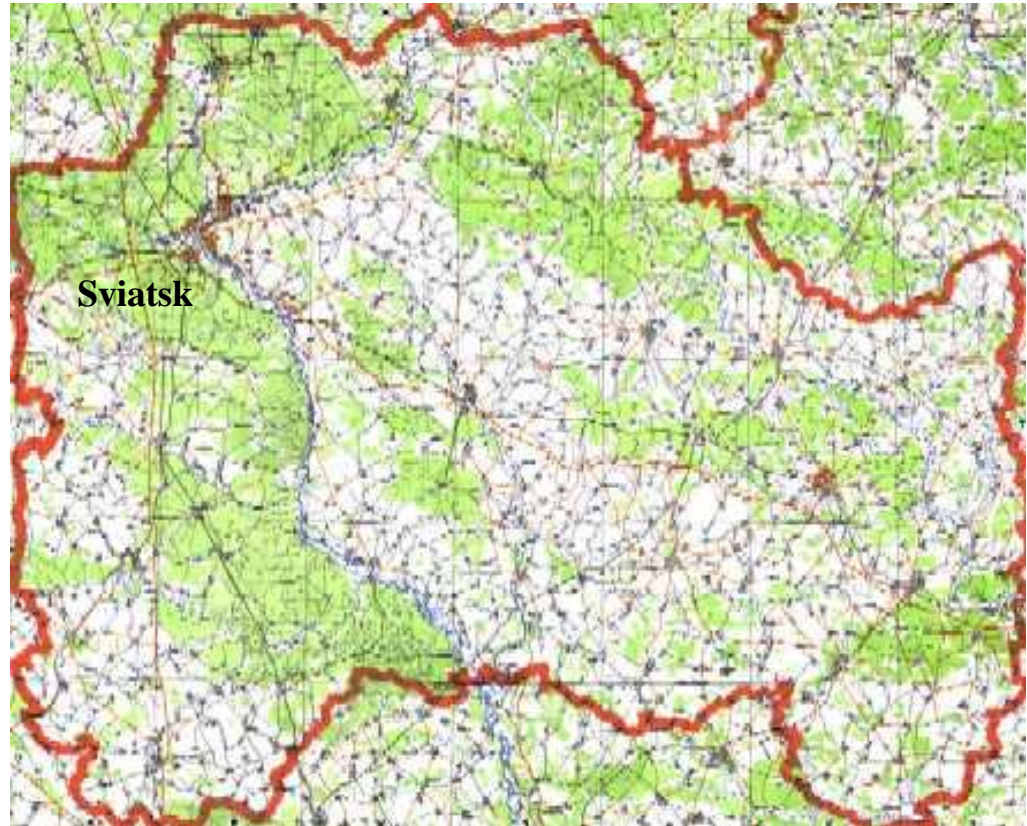
Sviatsk

Region detail characteristics

- **The State of the Sviatsk Region**
    - ◆ The region is situated in the centre of European part of the Russian federation. It has 230 km from West to East and 185 km from North to South. Total square of the region is 32984 sq. km.

- **Landscape**
    - ◆ Mainly plain with range of hills. The altitude is between 180 - and 280 m above the sea level. Two big rivers are running from North to South. There are three types of landscapes on the territory of the Sviatsk region:
        - ☞ moronic ridge;
        - ☞ terrace above the flood plane;
        - ☞ low lands in the valleys of the big rivers.

Region detail characteristics

- **Ecosystems**

    - It is the subzone of the South taiga. There are different succession of different ecosystems:
        - oak forests (climax);
        - Pinus forests with lichens and grasslands (xero-type);
        - upland moor with coniferous trees (oligotrophic type);
        - low -land bog (eutrophictype);
        - meadow-steppe plant communities on the sand terraces of the rivers.

    - In general natural ecosystems are typical for Moscow botanical-geographical region.

    - Sviatsk region is seriously transformed by human activity. The most part of it occupied by agricultural lands. Big natural territories are existing only along right bank of the river Violoshka and on the North of the territory on the humpback of the rivers Voloska and Kosva.

    - The oak forests are fragmented and surrounded by agricultural fields. The size of this "Oak islands" are not enough for sustainable existence of them. On the edge of disappearing meadow-steppe community, they call for immediate protection measures that demand extension of the protected land areas.

Region detail characteristics

- **Protected spices of animals and plants (10 spices)**
    - *The Elch.* Game animal, density 20-30 on the 100 sq. km. In Sviatsk region there are 1000 of eichs.
    - *The bear.* The total number in the region 10-15. To protect the bear the interregional program is needed.
    - *The beaver*....
    - *The big night bat.* The Red Date book of Russia,
    - *The geese*... Red data book of IUCN
    - *White partridge* (Ptarmigan)...
    - *The Lady's Sleeper*…

- **Social and Economy situation**
    - Population is 1475000. 75% is urban citizen. 30% of regional population is pensioners. Unemployment is very high - 26%. The population of regional centre Sviatsk is 460 000. Main industry: machinery (32,8%) food (20,3%), electrical energy producing (13,6%), building materials industry (12,5%), forestry, paper mill (5,2%) etc.

Scenario

- Following the Russia President decree all regions are demanded to elaborate plans of sustainable development. Taking into account several legal obligations in environmental issues that Russian Federation is fulfilling the interdisciplinary tool was designed for training local authorities, environmental service, nature protected territories, planners, green activists, NGO and students in long term planning.

- To reach the goal sophisticated method was proposed that integrated the power of human communication, system model and graphic representation of changes of the land and ecosystems.

Roles

- Commission on Sustainable Development of Sviatsk region. Each role description content full information about the region, social, economy and environmental status, several colour maps, decision list, causal diagram of interrelations, etc.
    - Governor. He is in charge of all general planning.
    - Economy Vice-Governor.
    - Finance and Taxes Adviser.
    - Social Services Vice-Governor.
    - Industry, transport, communication Vice-Governor
    - Agriculture Vice-Governor.
    - Head of the regional Committee of Ecology.
    - Head of the regional Forestry Service.
    - Science and Information Adviser.
    - Natural Reserve Director.
    - Head of the Fish and Hunt Service.
   - President of the Non Governmental Organisation.

Decision Making Steps

☞ Study thoroughly your role and Report on the "Status of the Sviatsk" region: environment, social life and economy.

☞ Suggest the criteria and indicators of effectiveness of nature protected areas in the region that corresponds to policy of economy development.

☞ Take part in discussion on economical evaluation of biodiversity in Sviatsk region.

☞ Suggest nature reserves and green belts net development that support the main interests of the main sectors of business in the region.

☞ Try to elaborate possibilities to gain the low tax rates for nature reserves and econet development.

☞ Figure out the sort of information you need for successful development of econet, defragmentation policy and monitoring system; pass order for this information to Head of science and Information service.

☞ Take active part in the discussion on the current budget draft on all main sectors: environment, economy, social services in co-ordination with the maps (landusers, landscape, nature protected areas and econet, nature ecosystems, industrial activity and the roads, etc.).

☞ Fill the form "Decision List' and pass it to PC operator.

☞ After "three years" passed get back your decision list with new information on the state of the region and your sector.

Using Maps
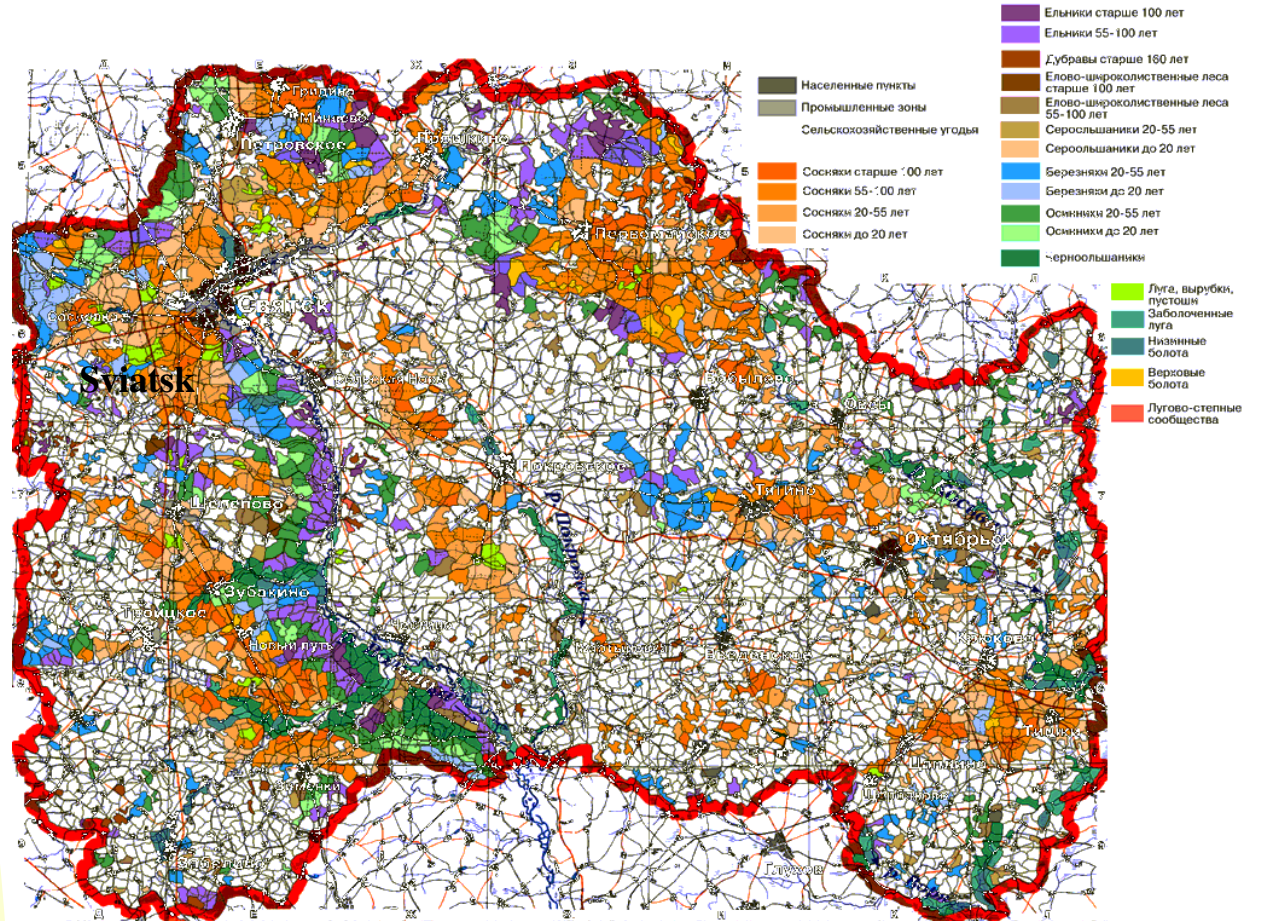
Using Decision List

FORESTRY SERVICE 'DECISION LIST"

REPORT FROM REGIONAL STATISTICS SERVICE		Units	Cycle	Years 1-3
Potential of the region	Environmental			
Forestry/Timber Production	Actually			
	Stored			
Forestry Indicators	Energy consumption			
	Labour efficiency			
	Fees for technology violence			
Forestry capital	Total			
	Depreciation			
	Working			
FORESTRY SECTOR RESOURCES				
Employees in forestry				
Timber amount				
Bank account				
Forestry activity areas				
Woodcutting areas				
Non forestry areas				

DECISIONS: FORESTRY SERVICE BUDGET DISTRIBUTION

REPORT FROM REGIONAL STATISTICS SERVICE		Units	Cycle	Years 1-3
Timber	For the population			
Forestry activity areas	selling/rent			
	buying/rent			
	limited use			
Woodcutting areas				
Non forestry areas	selling/rent			
	buying/rent			
Income from Selling timber and land				
Operating cost	Investment in the land buying			
	Investment in the forest technology			
	Energy supply			
	Environmental Fund			
Total Expenditures of the Forestry service				
Approved by the Governor				

Using Stock and Flow Diagram

Схема принятия решений
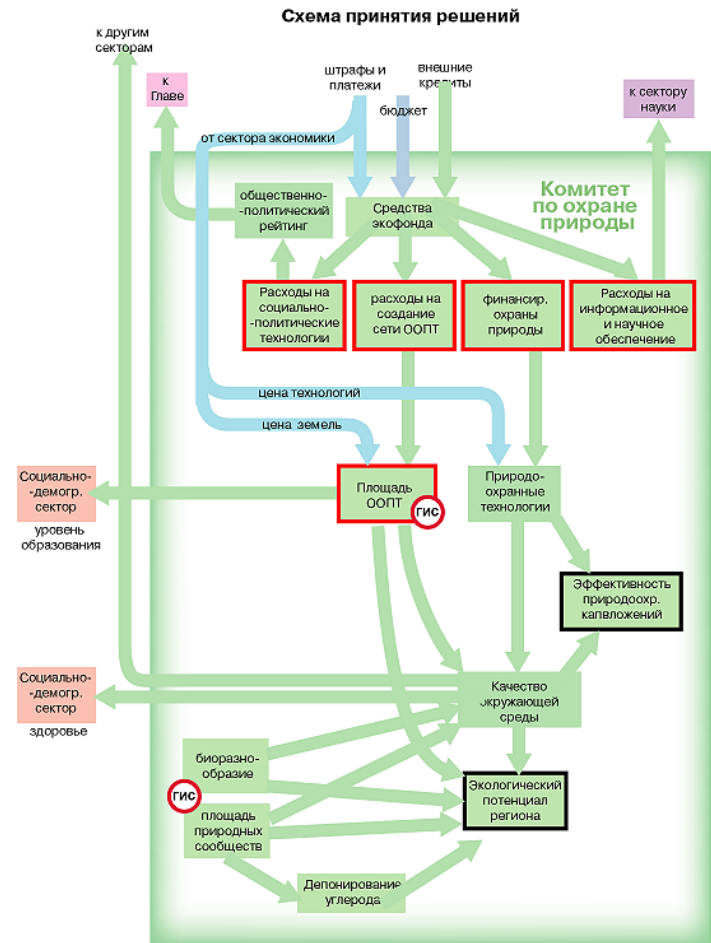
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