

---

## IM5: Discussion of WP5, WP6 and WP7 progress

### Minutes of the meeting 26 November, 2010

#### Present

##### **CEFIR**

Natalia Volchkova (Chair)  
Natalia Tourdyeva  
Irina Denisova  
Oksana Buturlina

##### **ZEW**

Andreas Löschel  
Victoria Alexeeva-Talebi

##### **TML**

Christophe Heyndrickx  
Joko Purwanto

##### **IET**

Vittoria Idrisova

##### **FECED**

Alexandr Abramov  
Denis Davydov  
Alexander Velichko

##### **USU**

Sergey Kadochnikov  
Oleg Mariev  
Olga Bashorina

##### **Regrets**

Irina Shchepina, VSU

#### Agenda

- I) SUST-RUS progress up to date
- II) Presentation of D3: Description of the general structure of the spatial-economic-ecological model for Russia
- III) WP5: Environmental dimension
  - Development of the Environmental Module
  - Integration of the Formatted Data into the Environmental Module
- IV) WP7: Social dimension
  - Social block of the SUST-RUS model
- V) WP6: International dimension
  - Literature review (CEFIR)
  - Methodology and mathematical formulation (TML)
  - Construction of the international module (TML)
- VI) Work plan for the upcoming year

*The agenda and IM5 presentations are available on <http://sust-rus.org>.*

---

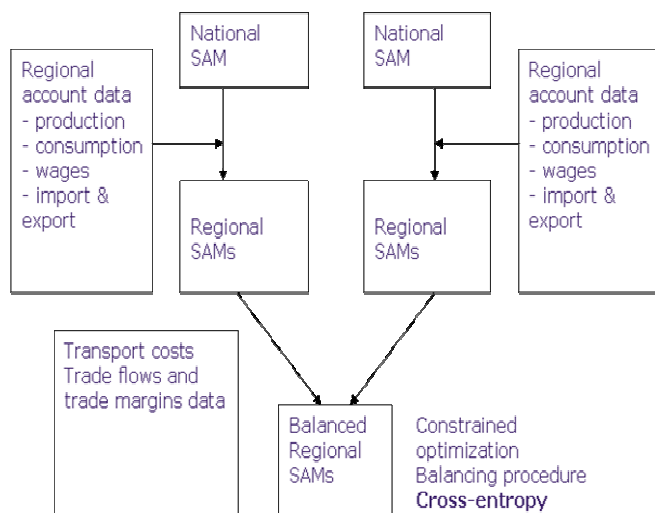
## Discussion and decisions

I) The SUST-RUS internal meeting IM5 took place in a very comfortable office of ZEW in Mannheim.

As an introduction to the meeting Natalia Volchkova (CEFIR) gave us the update on the project progress and pointed out (highlighted) that our current focus is the preparation for D5 “Description of the environmental, international and social part of the model” due in March 2011.



II) Christophe Heydrickx (TML) provided some explanation on the model implementation in WP3. The main objective of WP3 was to create the first (basic) version of the model, which does not include the special social, international and environmental modules.



Consistency check = Are trade flows and calculated margins correct and consistent with historical data

### Model database

- Calibration of the model and corrections to database are mostly handled within the code
- SUSTRUS 1.0 separated in calibration and model part
- Model has both a **static** and **dynamic** version, main difference is that dynamic version holds a loop solving the model through multiple time periods, based on capital dynamics.
- Data for model was provided by CEFIR

### Main inputs:

- Input-Output table of 2006 and national accounts data → used to construct national SAM
- Regional input-output tables → used to disaggregate national SAM in 7 federal districts
- Database of exogenous parameters
- Data on trade margins, based on TNO's EXIOPOLL database
- Auxiliary regional data provided by CEFIR and Russian partners (labor market data, transport costs, firm level data, etc.)

### Planned work – Extensions to the original model

- Economic module:
  - Alter the assumption on perfect competition for some sectors (for example gas, oil sectors)
  - Unemployment modeling
- Social module:
  - Add different household types to the database (urban-type, rural type)
  - Skill levels by household type
  - Demand for skills at sector level
- Environmental module:
  - Will be a separate module, operating in parallel with the economic module
- International module:
  - Improve representation of the international dimension, distinguish EU trade, US trade, China, Japan, etc. and the access to these countries

III) Victoria Alexeeva-Talebi and Andreas Löschel (ZEW) shared their ideas on building the Environmental Module and methodology for the assessment of data.

The key issues raised:

- Two main tasks of environmental module:
  - Modeling of Russia's environmental development depending on economic activities and feedbacks of damage to economic activities.
  - Modeling the impacts of environmental policies on the behavior of model agents and thus on Russia's economy and environment.
- Environmental dimensions
  - Global: climate change (CO2 emissions)
  - Restrictions in the analysis of global warming policies and damage valuation: SUST-RUS is not a global model, i.e. RoW is represented at an aggregated level and is exogenous.
- Proposed stages of working on Environmental dimension:
  - Linking emissions from economic activities to SUST-RUS
  - Abatement options in SUST-RUS environmental module
  - Modeling of abatement costs and linking to SUST-RUS
  - Modeling of environmental policy instruments in SUST-RUS
  - Integration of emission costs into the SUST-RUS model framework
  - Modeling of transboundary effects of emissions and transformation into concentrations / depositions
  - Modeling of environmental damages and their monetary evaluation
  - Feedback effects of health impacts of local air pollution

IV) Irina Denisova (CEFIR) presented her view on building the Social dimension (WP7).

- **Social block: Pollution, public health and social welfare**
  - Labor market
  - Health and labor market effects of pollution
  - Income distribution (poverty and inequality)
- **Core stones of Social Dimension:**
  - Health effects of pollution in a CGE model
  - The baseline model: Health effects in GEM-E3
    - Health in household sector
    - Health-related effects in production
  - An alternative: Household production (HHP) sector in EPPA
  - Parameters to calibrate
  - Valuation of damage
  - Labor market
  - Income distribution issues. Three options to consider:
    - CGE model with representative agents
    - Integrated multi-households CGE analysis
  - Sequential micro-simulation approach

## V) WP6. International dimension

- The issues of Literature review in WP6 were presented by Natalya Tourdyeva (CEFIR).
  - According to the Description of Work, the aim of WP6 is to develop the international module of the SUST-RUS assessment model which includes the representation of the flows of goods, capital and labor between Russia and several major foreign geographic areas.
  - It was suggested to narrow down the scope of work to aspects crucial for success of SUST-RUS project, leaving behind some less relevant (or less available) aspects.
  - Therefore the literature review should present an overview of applied model and rather theoretical approaches.
  
- The main objective in WP6 – the representation of the major links between the Russian trade with the European Union and the rest of the world, its economic development and the depletion of its natural resources to the SUST-RUS modelling framework – was presented by Christophe Heydrickx (TML).

### Work Package structure

- **Task 6.1:** Literature review (CEFIR)
- **Task 6.2:** Methodology and math formulation (TML)
- **Task 6.3:** Work on model database (TML)
- **Task 6.4:** Construction of international module (TML)

Issues discussed included the following:

#### Methodology

- Based on the literature review
- The international module of SUST-RUS represents the flows of goods, capital and labor between Russia and several foreign geographical regions.
- Regions include Scandinavian countries, Eastern European countries, Central and Western European countries, Asia, Africa and America (large focus on EU –regions)
- The trade patterns between Russia and foreign regions are explained by the specific preferences of the Russian consumers and producers, differences in the price levels, freight transportation costs and the existence of monetary and non-monetary barriers to trade.

#### Trade and transport

- Russia is a large country and regions are not very well connected
- Goods trade consumes transport margins, which are produced by the transport and trade sectors
- Exports and imports from other countries → model via ‘portals’
- Include ‘transportability’ of a good: most materials can be transported easily, services however are a lot less transportable (education, health, government)

#### Possible data sources for WP6

- Goskomstat
- Economic models (GTAP database)
- Econometric studies (Russian literature on migration, FDI inflows)
- International databases

## VI) Work plan for the upcoming year

- SUST-RUS working meeting between ZEW, TML and CEFIR – mid. Dec 2010 (via Skype)
- SUST-RUS Internal meeting IM6 – beginning of May 2011 (TML’s office, Belgium)
- SUST-RUS Public Seminar – EcoMod Conference in Portugal, end of June 2011 (to be confirmed)
- SUST-RUS Public Conference for policy-makers – October-November 2011, Moscow

---

## The outcome of the meeting and assignments

The successful outcome/result of WP5, WP6 and WP7 depend to a large extent on the data and its quality. Therefore CEFIR undertakes the task to check the availability of all needed data and provide ZEW and TML with these findings. Our regional partners will take an active part in search of the data.

### ZEW needs the following data:

- Sector-, fuel- and pollutant-specific exogenous (baseline) emission factors for Russia (e.g. from empirical and engineering studies, Russian energy balances, emissions inventories)
- Share coefficients for the energetic use of coal, gas, oil in production sectors (→ exclude non-energetic use of fuels from emissions calculation, e.g. oil in refineries)
- Empirically estimated sector-specific marginal abatement cost functions for SO<sub>2</sub>, NO<sub>x</sub>, VOC, PM. Assume that marginal costs are increasing on a progressive scale in the amount of already abated emissions.
- Aggregation of grids per region leads to a matrix of transport/deposition coefficients relating emissions of one region to deposition and concentration in another region.
- The transported emissions into a region will be translated linearly into ambient air concentrations (O<sub>3</sub>, PM<sub>10</sub>) and depositions (sulphate, nitrate) of secondary pollutants.

### TML needs the following data for WP6 main elements

- Monetary and non-monetary barriers
- Movement of labor
- FDI investments, Greenfield vs. Brownfield: Econometric studies on FDI in Russian market (S. Ledyeva (2007), Spatial econometric analysis of FDI in Russian regions and (2010) FDI location choice for Japan/China and US)
- FDI in recursive-dynamic structure: Can be integrated without any additional problems

## Save the date

IM6 will be held in **May 2011**, probably in Brussels (TML's office). More details about the meeting will be available in April 2011.

## Tentative agenda for the next meeting

### **IM6: Presentation of results of WP5, WP6, WP7 and progress on WP8-WP9**

This internal meeting will sum-up first two year of the project. It will host presentation of results of WP5, WP6 and WP7, as well as discussion of strategies for WP8 and WP9.

---