

26.OECD/EUROSTAT N BALANCE ANALYSIS	
FAIRWAY partner: Matjaž Glavan (UL, SI), Case study leader Katarina Kresnik, Andrej Jamšek (KGZ Maribor, SI)	
 REPUBLIC OF SLOVENIA MINISTRY OF THE ENVIRONMENT AND SPATIAL PLANNING	
Brief description	
Joint Eurostat/OECD meetings identify and agree on the most robust and feasible methodology for the calculation of a nitrogen (and also for phosphate) balance. This handbook sets out the main principles of the methodology across OECD and EU Member countries. The aim is to be able to consistently produce an indicator based on a single methodology and harmonised definitions for all countries. In Slovenia results are prepared by Agricultural Institute for Ministry of environment and spatial planning. This paper based tool serves as basis for reporting to EU about Nitrate directive implementation and as basis for preparation of legislation and measures for drinking water protection.	
Contaminants covered (e.g. nitrate, pesticides etc.)	N, P
Intended end users (e.g. farmer, water quality manager, policy maker)	Policy makers
Level of expertise and/or training required	High level of expertise and training required to understand and use the guidelines.
Geographical resolution (e.g. field, catchment, national)	National, Regional, Local, Field scale.
Temporal resolution (e.g. daily, annual, long-term).	Annual
Real-time component (e.g. live weather data, soil moisture data feeds etc.)	None
Number and type of mitigation measures included	None
Platform (e.g. paper-based tool, phone app, bespoke software).	Paper-based tool – open source available via web. http://ec.europa.eu/eurostat/cache/metadata/Annexes/aei_pr_gnb_esms_an1.pdf
Frequency of updates	Every few years with new development of knowledge
Cost/availability	Free.
Number of users or number of copies distributed/downloaded/purchased	Member states of OECD and EU as well as other interested.
Links to demo material and other relevant information (e.g. user guides).	Open source – Web available. http://ec.europa.eu/eurostat/cache/metadata/Annexes/aei_pr_gnb_esms_an1.pdf http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm http://kazalci.arso.gov.si/?data=indicator&ind_id=818&lang_id=94 http://kazalci.arso.gov.si/?data=indicator&ind_id=818 http://kazalci.arso.gov.si/?data=indicator&ind_id=465&lang_id=94 http://kazalci.arso.gov.si/?data=indicator&ind_id=465
Additional comments	- pesticides part is in the process of establishing In lack of other tools, capable of modelling agri-environmental measures, this is still preferred way of making conclusions and new decisions. Eurostat/OECD results are most often coupled with state monitoring results to accept new decisions.

OECD/EUROSTAT N balance analysis based	
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Input data required to run the DST	Information needed for getting the tool properly used are: <ul style="list-style-type: none"> - Mineral fertilizers input - Manure production - Net manure import/export, withdrawals, stocks - Other organic fertilizers input - Biological N fixation - Atmospheric N deposition - Seed and planting materials - Crop production - Fodder production - Residues removed /burnt
Outputs (including links to water quality and economic or financial aspects)	<ul style="list-style-type: none"> - Gross nitrogen surplus in agriculture - Gross phosphorus surplus in agriculture
Age/provenance of supporting data used to develop the DST	<ul style="list-style-type: none"> - Professional research and scientific knowledge was used to develop this paper tool – handbook. http://ec.europa.eu/eurostat/cache/metadata/Annexes/aei_pr_gnb_esms_an1.pdf http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm
Country-specific calibration or data requirements (including restrictions on use)	No.
Details of validation and testing	No special details. Model results can be validated with other tools/models.
Date developed/released (or planned release date)	Developed in 2007 and updated in 2013 as last version.
Author/developer names and affiliations	European Commission/Eurostat
Member state(s) where developed	EU
Member State(s) where currently used	EU
Key publication references (including url)	http://ec.europa.eu/eurostat/cache/metadata/Annexes/aei_pr_gnb_esms_an1.pdf

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Any other useful information (e.g. screenshots of DST input/outputs)



Methodology and Handbook Eurostat/OECD

Nutrient Budgets

EU-27, Norway, Switzerland

Date: 17/05/2011
Version: 3.01
Author: Anne-Made Koster
Reviewed by:
Approved by:
Public:

Table 2. Current, ideal and proposed improved Gross Nitrogen Budgets

Current GNB	Ideal GNB	Proposed GNB
INPUTS		
N1 Mineral fertilizers	N1 Mineral fertilizers	N1 Mineral fertilizers
N2 Manure production	N2 Manure production	N2 Manure production
N3 Net nitrogen input/output, synthetic materials, stocks	N3 Net nitrogen input/output, synthetic materials, stocks	N3 Net nitrogen input/output, synthetic materials
N4 Other organic fertilizers	N4 Other organic fertilizers	N4 Other organic fertilizers
N5 Biological N fixation	N5 Biological N fixation	N5 Biological N fixation
N6 Atmospheric N deposition	N6 Atmospheric N deposition	N6 Atmospheric N deposition
N7 Seed and planting materials	N7 Seed and planting materials	N7 Seed and planting materials
N8 Crop residues input	N8 Crop residues input	N8 Crop residues input
N11 Total inputs = sum (N1, N2, N3, N4, N5, N6, N7, N8)	N11 Total inputs = sum (N1, N2, N3, N4, N5, N6, N7, N8)	N11 Total inputs = sum (N1, N2, N3, N4, N5, N6, N7, N8)
OUTPUTS		
N12 Crop production	N12 Crop production	N12 Crop production
N13 Fodder production	N13 Fodder production	N13 Fodder production
N14 Crop residues output	N14 Crop residues output	N14 Fertiliser returned to soil
N15 Stock changes of N in soil	N15 Stock changes of N in soil	N15 Stock changes of N in soil
N17 Total outputs = sum (N12, N13, N14)	N17 Total outputs = sum (N12, N13, N14, N15)	N17 Total outputs = sum (N12, N13, N14)
SURPLUS		
N20 GNB = N11 - N17	N20 GNB = N11 - N17	N20 GNB = N11 - N17
	N22 aGNB = 75 gN/ha minimum	N22 aGNB = 75 gN/ha minimum
	N23 bGNB = N20 - N22	N23 bGNB = N20 - N22

Results for Slovenia prepared by Agricultural Institute of Slovenia for the Ministry of environment and spatial planning

