

## Brazilian environmental accounting initiatives

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In a country of continental size and endowed with incredible environmental assets such as Brazil, it is not immediately feasible to coordinate national and climate change accounts, perhaps due to caution. However, recent federal legislation (Law No. 13.493/2017) has mandated the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*—IBGE) to calculate and release—annually, if possible—the country's 'green domestic product' (*Produto Interno Verde*—PIV), detailing the nation's environmental assets. The greatest challenge to this endeavour will be to determine the methodology that will underpin the national accounting system to be adopted.

Wadih Scandar, Director of Geosciences at the IBGE, considered it possible for Brazil to develop a national methodology based on the System of Environmental Economic Accounting (SEEA), capable of combining Brazil's efforts to tabulate water and land use with the likely prospect of accounting for energy and forests. The Soil and Water Assessment Tool (SWAT)<sup>2</sup> might be used, together with inputs from the IBGE. For linkages with climate change, the Intergovernmental Panel on Climate Change (IPCC) framework<sup>3</sup> was mentioned as the source of statistics on emissions and their consequences. He estimated that a period of two to three years would be necessary to study methodologies that are able to assimilate official statistics.

Sérgio Ayrimoraes, from the National Water Agency (*Agência Nacional das Águas*—ANA), talked about the application of water accounts in the development of the National Water Resources Policy. He presented the state of water accounting in Brazil. ANA, IBGE and the Water Resources Secretariat of the Ministry of the Environment have used SEEA-Water to calculate Brazil's economic water accounts. Stock-taking and water flows from the different regions of the country have been regularly assessed. Several categories have been determined under the National System of Information on

Water Resources:<sup>4</sup> usage by sector (animal, industrial, rural, urban, irrigation, mining, thermal); water consumption per unit of economic activity by sector vs. its contribution to gross domestic product (GDP); and many other linkages between economic accounting and water resources.

Geraldo Góes, specialist in public policy and government management at the Water Resources Directorate of the Ministry of the Environment (*Ministério do Meio-Ambiente*—MMA), stated that the National Water Resources Plan has been reviewed regarding the definition of priorities for 2016–2020. Representatives of civil society and government authorities at the federal and local levels have discussed initiatives and goals through public consultations. Knowledge about current and future water demands was highlighted as one of the priorities regarding the availability of the resource in both qualitative and quantitative terms.

The audience raised questions about the aggregation and disaggregation of data. The seminar participants discussed the need to increase human resources within institutions to explore opportunities in water accounting, to promote the success of the economy and the environment, and consumption and productivity pairings.

### Notes:

1. This seminar was a joint initiative between Ipea, the International Policy Centre for Inclusive Growth (IPC-IG), the Brazilian Institute of Geography and Statistics (IBGE) and the Economic Commission for Latin America and the Caribbean (ECLAC) in Brazil, requested by the Brazilian Ministry of the Environment, financially supported by the Institute for Climate and Society (ICS) and with the technical support of Rede Clima. Technical Rapporteur: Flávia Witkowski Frangetto. For additional information, see <[http://www.ipc-undp.org/pub/eng/JP16\\_Report\\_International\\_Seminar\\_on\\_Linking\\_Climate\\_Change.pdf](http://www.ipc-undp.org/pub/eng/JP16_Report_International_Seminar_on_Linking_Climate_Change.pdf)>.
2. SWAT is a public domain model to simulate the quality and quantity of surface and ground water and predict the environmental impact of land use, land management practices and climate change. See <<http://swat.tamu.edu/>>.
3. See <[https://www.ipcc.ch/publications\\_and\\_data/ar4/wg2/en/ch19s19-1-2.html](https://www.ipcc.ch/publications_and_data/ar4/wg2/en/ch19s19-1-2.html)>.
4. See <<http://www.snirh.gov.br/>>.