Application of a Green-Jobs SAM with Employment and CO2 Satellites for Informed Green Policy Support: The case of Indonesia

Topic: Innovative SAM Structures
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Use of SAM methodology to assess impacts of key public development policies on the economy, employment and CO2 emissions using a green-jobs 2010 SAM for Indonesia.

Assessed aspects: Shifts toward environmental technology and impacts on the economy, employment and emissions at macro level.

Description of the methodology:

The focus is on deriving potential indicators and the use of scenario analysis to assess policies aiming at the greening of the economy with better quality jobs. The problem of dated SAM is tackled by using the latest SAM extracted from the dynamic SAM algorithm (DySAM). The DySAM generates a series of SAMs, all consistent with the SNA and other time series data.

To derive SAM-based transparent potential indicators and set-up scenarios a GJ-ESAM is built. This requires expanding the SAM with green-jobs technology satellites and to extend it with employment (youth and gender) and CO2 emission satellite modules. This allows setting-up counter-factual green-jobs vs. brown-jobs scenario simulations to test green-jobs sectors performance vis-Ã -vi brown/hybrid sectors - an important step.

The following potential indicators can be derived:

1- Economy multipliers, total, partial and cross-account linkages;
2- Intra and induced impact multipliers;
3- Employment cumulative impact indicators and direct multipliers;
4- CO2 emission cumulative impact indicators, partial and cross-account multipliers

Focus of the Analysis: Transition towards green economy has to be well assessed and then supported by appropriate public policies, which may include skills training and re-orientation toward green activities, social protection to counter income loss, and support for labour shifts from brown to green jobs. Then the transition has to be well planned, managed and implemented.

Counter-factual fiscal stimulus package type scenario simulations can help test green-jobs sectors performance vis-Ã -vi brown-jobs sectors, by providing insight into how to comparatively evaluate policies aimed at shifting towards ecologically friendly technologies. Such simulations can highlight best policy options to attain higher economic, income and employment growth and reduce pollution, by tracing potential instruments, quantifying indicators and scenario impacts.

Main purpose of the Assessment: Nowadays, most economies attempt to shift to more environmentally friendly technologies, among others, to improve labour conditions and reduce emissions. The GJ-SAM-based analysis, combined with scenario simulation, can provide helpful inputs for policy discussion and decision-making. Hence, it is important to identify appropriate quantifiable policy instruments to help policy makers to better understand linkages and transmission mechanisms that take into account environmental degradation and the technology/sectoral implications and their impacts on growth, employment and emissions.

From the analysis of GJ-SAM indicators and two sets of simulations, i.e. one considering only green and brown infrastructure sectors and the another considering only non-construction green and brown sectors, the following conclusions can be drawn:

â€¢ Green-jobs technology is a relative concept, thus must be made country specific.

â€¢ Indonesia is just beginning, e.g. green accounts for 6 % of production, 2.5% employment and 2.9% of emissions and brown accounts for 19 % of production, 27 of employment and around 40% of emissions.

â€¢ Going-green is a process and progress depends on specific sectors and trade-offs, holds also for employment and CO2 emissions.

• Transition-to-green needs public policy support: incentives, skills development and re-orientation, social protection and mobility.

• Green indicators and scenario analysis show mixed signals for green-jobs.

• Going-green means gradual pollution reduction.

• Technological innovation may help reduce pollution faster but trade-offs between going-green and staying brown must be taken into account; it can also enhance employment with quality jobs and may improve female participation.

• On the average, green sectors appear to have relatively higher productivity and require higher skills associated with higher income.

• Production emissions account for most CO2 emissions and household emission are for the most part induced.

• Several green sectors are significant polluters but most show induced effects.