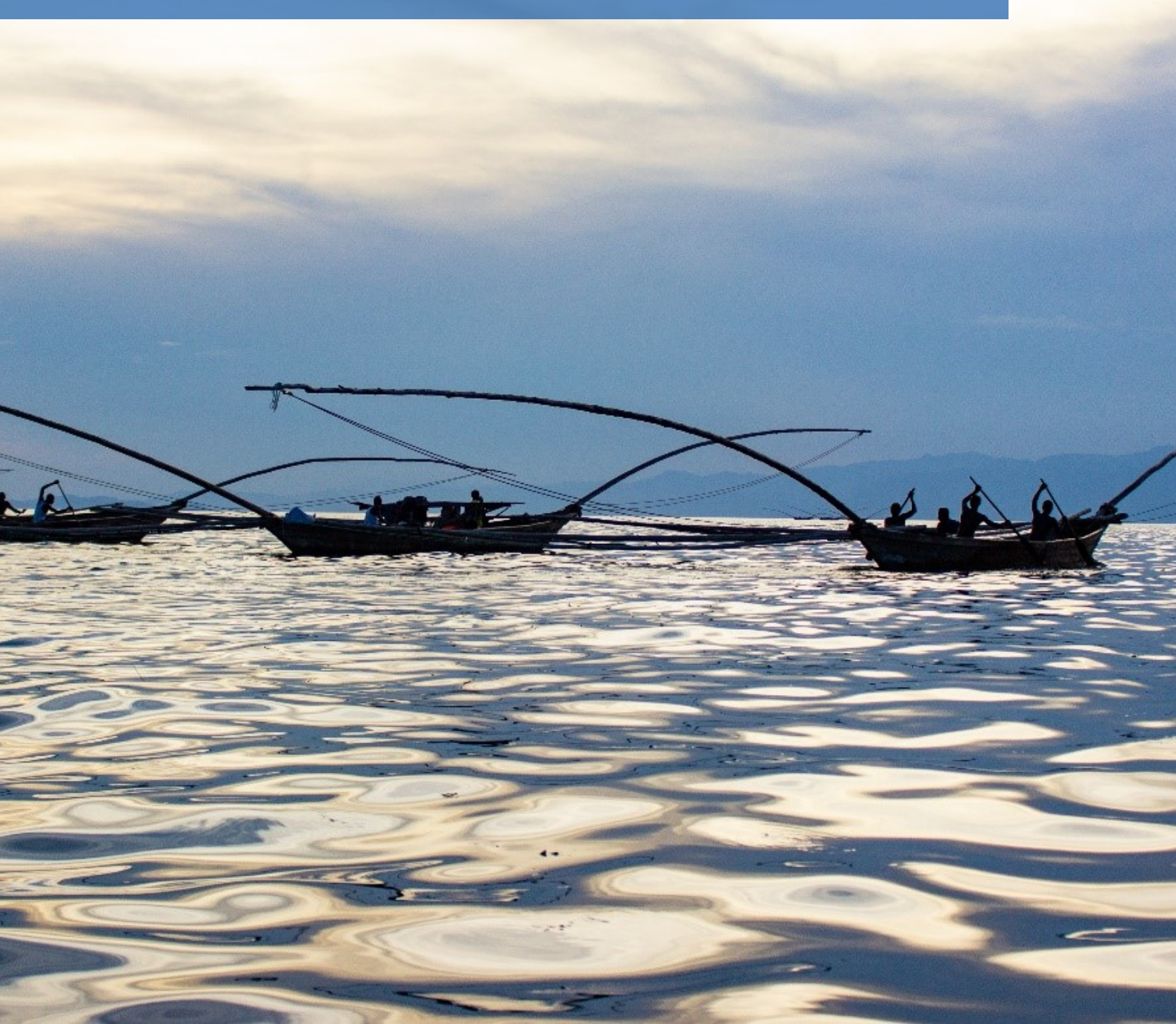


# THE NIA NEXUS IMPACT ASSESSMENT (NIA) TOOLKIT

## Turning Concepts into Action



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## 4. WEF Nexus Indicator Tool

The WEF Nexus Indicator tool is another helpful tool of the Nexus Impact Assessment (NIA) Toolkit that is designed to demonstrate the different interconnections/synergies and trade-offs in a measurable way. In doing so, the tool can be used as a guide to identify co-benefits that can be created or trade-offs that need to be prevented, while conceiving a project (ensuring all aspects are considered) and actually providing a canvas for a M&E system of an integrated project (we need more evidence of the added-value of the Nexus approach).

Water, energy, food (WEF) Security Nexus projects are wide and diverse, from drought-proofing of rainfed agriculture and systematic irrigation development, to multi-purpose hydropower dams, to restoring wetlands for food and water security, and rendering industrial processes more efficient, or climate smart through energy efficiency and renewable energy interventions. Their objectives are to enhance synergies and minimise trade-offs between water, energy, and food security (Simpson et al., 2022). Providing more water, energy, or food, however, does not guarantee that shared challenges are reduced (World Resources Institute (WRI), 2019). WEF Nexus projects therefore generally serve to implement activities that increase the likelihood of generating social, economic, and environmental benefits, whilst solving shared water, energy and food challenges.

This is crucial for monitoring and evaluation (M&E) purposes because it implies that any evaluation of a WEF Nexus project, should strive to monitor progress on achieving water, energy and/or food security, but also the associated incidence on wider concerns of interest. These will vary from project to project – according to the underlying Theory of Change (for more information see chapter on M&E for WEF Nexus projects) – which depicts the overall goal of the project and the outputs that conditions that goals. In many cases, the overarching objective is that of enhancing the wellbeing and livelihoods of rural communities (e.g., as seen in the demonstration projects in Ecuador and Peru – see the respective chapters of the cost-benefit analysis (CBA)). In these projects, indicators of relevance therefore also pertain to the number of jobs created, the additional income that is generated and the extent to which women are benefitting. Energy, water and food security may also be measured in widely varying ways, pending on what the project is seeking to achieve. Under the water security umbrella, some projects may be concerned with water quality, others with water affordability or efficiency. Their geographical boundaries as well as M&E budgets may vary.

Consequently, there is no standard, nor compulsory set of indicators to be measured under the WEF Nexus umbrella. Decision making over which indicators should be measured should be left to actual project teams and M&E staff. They are typically defined when conducting a Theory of Change or associated logframe. As such, indicators are specifically tailored to the project. This process helps ensure efficiency and cost-effectiveness in monitoring, in alignment with WEF Nexus philosophy. Only those indicators that meet the needs, uses and interests of concerned stakeholders – project partners, developers, donors, etc. – should be measured.

When the process is undertaken rigorously, project evaluation will serve its ultimate purpose, for example helping project developers and donors understand *if the WEF Nexus intervention achieved what was intended, and if not, why so and what can be improved going forward? What is the added-value of the WEF Nexus intervention, relative to the 'without-project' baseline? Has the project compromised any WEF Nexus dimension, in striving to improve water, energy or food security, etc.?*

## Necessity of WEF Nexus Indicators

Whilst there are no “one size fits all” indicators for measuring progress of WEF Nexus projects, there is an incredible wealth of measurement frameworks, existing indicators and methodologies that pertain to water, energy and food security. Some are designed for the national level (e.g., the United Nations Sustainable Development Goals (SDGs)), others for the corporate reporting (see Reig et al., 2019, GRI), others at the project level (e.g., FAO 2001; CIFOR-PEN, 2007; WOCAT) or sector level (IEA, 2014), etc.

An excel-based catalogue compiles a set of quantitative and qualitative indicators from these different resources that are relevant to WEF Nexus projects or those projects that are at the interface of, for example, energy-water or water-agriculture. The purpose of this WEF Nexus Indicator tool is to:

- *provide an entry point that allows projects, which are often built on a sectoral logic, to think directly about the potential impact on the other sectors during the project appraisal / planning phase as well as during project implementation.*
- *inspire and help project developers and M&E staff in selecting indicators of relevance to monitor and evaluate WEF Nexus projects with respect to water, energy and food security, and selected co-benefits, such as climate mitigation and land restoration, and jobs created.*
- *offer information on how to measure indicators across the WEF Nexus and beyond (livelihood and environment etc.).*
- *show where to obtain information about an indicator for which global data is already being compiled. For example, several indicators, pertaining to the SDGs, are tracked at a national level, which allows for obtain benchmark estimates, against which one may compare indicator outcomes within a WEF Nexus intervention site.*
- *support policy and decision-makers to identify the potential of multi-sectoral actions and to ensure cross-sectoral project planning and implementation.*

The SDGs, in particular, offers a good entry point to monitor WEF security, and internationally WEF Nexus has become accepted as a mechanism for facilitating progress toward the relevant sector-related SDGs (Simpson et al., 2022; Simpson and Jewitt, 2019), i.e.

- *SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture)*
- *SDG 6 (Ensure availability and sustainable management of water and sanitation for all)*
- *SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all)*
- *Many aspects of the WEF Nexus approach are also linked to other SDGs, such as SDG 13 (Climate Action) and SDG 15 (Life on Land), among others.*



To see why, the definitions in Annex 1 are repeated. Here, water security is defined as “the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socioeconomic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability” (UN Water, 2013). Energy security is defined as “the uninterrupted availability of energy sources at an affordable price” (IEA, 2021), and “access to clean, reliable and affordable energy services for cooking and heating, lighting, communications and productive uses” (AGECC, 2010). Food security is defined as the state in which “all people at all times have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active, healthy life” (FAO 2014). The security of each of these three core elements therefore share the same sub-divisions of ‘Access’ and ‘Availability’.

The Nexus Toolkit’s WEF Nexus Indicator tool (see Annex 3) focuses on a sub-set of relevant SDG indicators together with other indicators of relevance to the project level that are deemed useful for M&E purposes of WEF Nexus project or activity. The WEF Nexus Indicator tool lends in part from Simpson et al. (2022), who has developed a country-level WEF Nexus Index of 87 water-, energy-, and food-related indicators, that has been calculated for 181 nations using open databases. Visualisations associated with the WEF Nexus Index have been compiled in an interactive [website](#). As mentioned above, national estimates can be used as benchmark against which a project-level intervention can be considered. Finally, M&E teams may also draw inspiration from the full set of global SDG indicators used to track progress towards SDG 2, 6 and 7. These along with available country (compiled and verified by the responsible United Nations agencies), can be retrieved through the following links in Table 1:

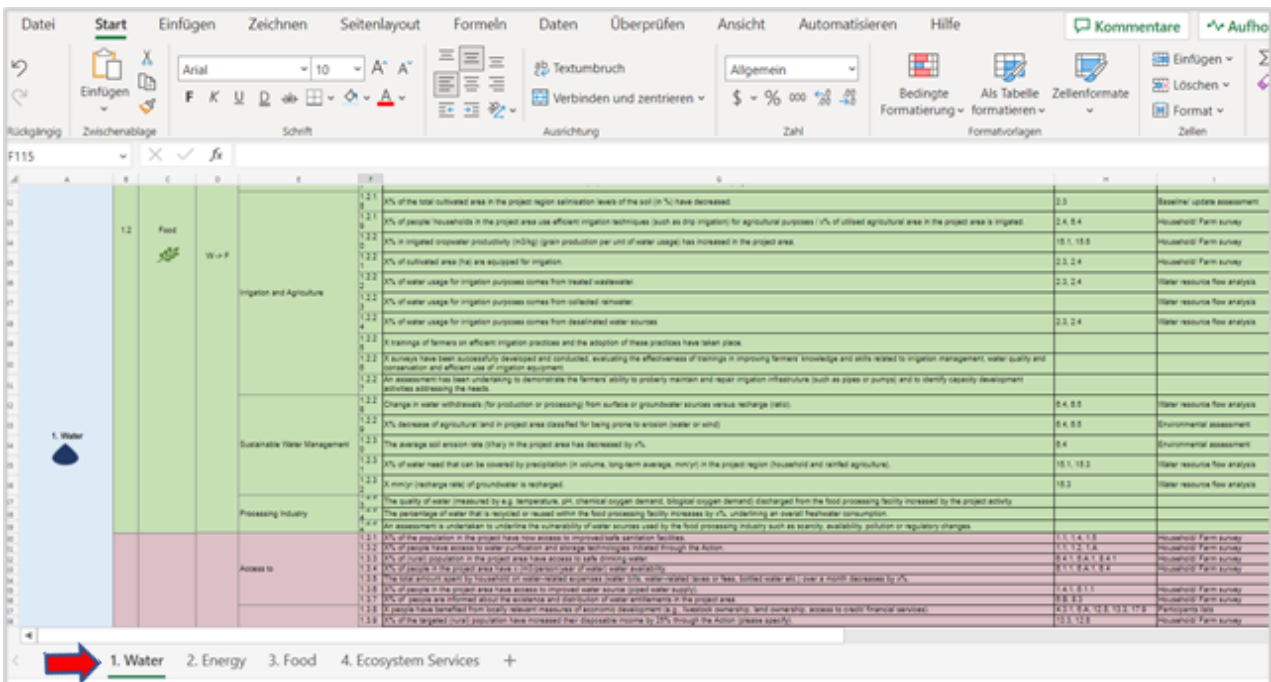
Sustainable Development Goal	Country data and global indicator source
SDG 2 - FOOD	<a href="https://sdg-tracker.org/zero-hunger">https://sdg-tracker.org/zero-hunger</a>
SDG 6 - WATER	<a href="https://www.sdg6data.org/">https://www.sdg6data.org/</a>
SDG 7 - ENERGY	<a href="https://trackingsdg7.esmap.org/about-us">https://trackingsdg7.esmap.org/about-us</a>

Table 1: Data on WEF sector-related SDGs

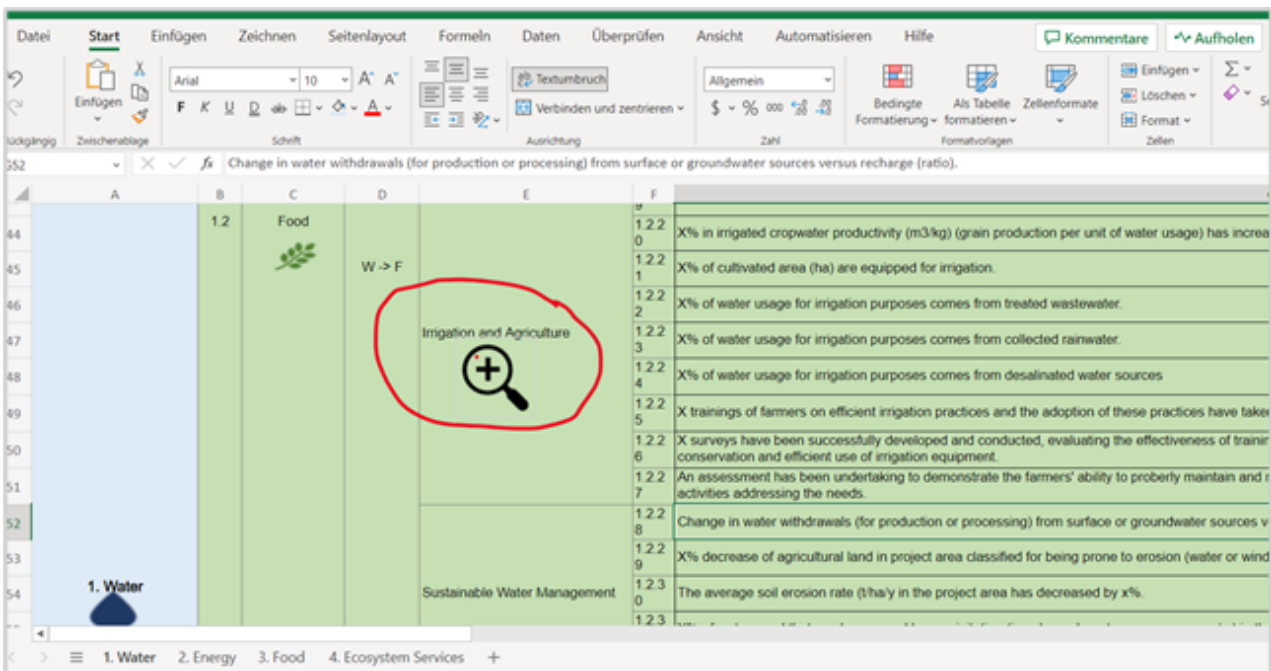
The WEF Nexus Indicator tool also has a special dedication to gender indicators. The purpose of including gender indicators is to obtain information that will inform the progress of a WEF Nexus project gender-related outcome and/or retrieve data that could be used to inform initiatives in the sectors of focus. These indicators refer to quantitative indicators based on sex disaggregated statistical data as well as qualitative changes over time, which can be classified into ‘gender-responsive’, ‘gender-sensitive’, or just ‘gender’ indicators. To define appropriate gender indicators for an M&E assessment of a WEF Nexus project, it is suggested first, to assess if the WEF intervention activities are planned to reach both women and men. Second, to evaluate if the expected outcomes for the WEF Nexus project are themselves gender sensitive. If this is not the case, then project developers and M&E staff should define, to the extent possible and within the framework of the WEF Nexus project, gender-related indicators aiming to provide data on progress towards desired changes on gender inclusiveness and/or gender equality. Gender indicators will have to be defined and adjusted accordingly to each WEF project context and goals.

Despite the seemingly complex Excel-based document, the handling of the Excel spreadsheet is easy and quickly explained. The following steps lead through the Excel spreadsheet and help develop adequate indicators for project planning. The entry point is project goal or topic (e. g. the aim is to establish a new project to overcome water scarcity in the project area):

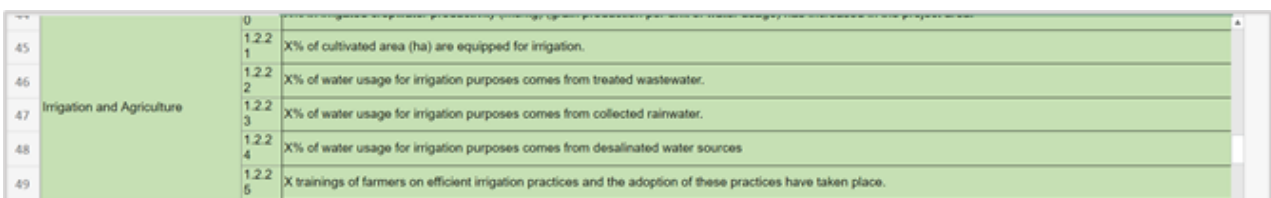
**Step 1:** Open the Excel sheet "Water".



**Step 2:** Closer look to the intersection of what is most interesting for the project such as Water and Food and then choose the sub-section such as "Irrigation and Agriculture".



**Step 3:** Take a look at the numerous indicators, that can be helpful for the project.



**Step 4:** Search for further indicators in the other subsections that are important for a successful M&E and a cross-sectoral set-up of a project.

**Step 5:** Define common indicators that strengthen WEF Security.

## *In a nutshell*

*The WEF Nexus Indicator tool is divided into four categories (Water, Energy, Food, Environment), with five subgroups at each sheet (Water, Energy, Food plus Livelihoods, Governance, Climate Change). It highlights the WEF Nexus contributions to the Sustainable Development Goals (SDGs) and provides sources of verification. It is a dynamic tool and will constantly be in progress.*

*In addition, the WEF Nexus Indicator tool is by no means exhaustive in terms of given the wide diversity of WEF Nexus projects and possible objectives underlying any WEF intervention. More importantly, as argued above, project indicators should be uniquely suited to the project under consideration and needs of the project team.*

*This requires careful deliberation amongst the project team, stakeholders, M&E staff and associated research (as explained above). In this regard, the WEF Nexus indicator tool can serve as inspiration, and as a learning resource, but should not replace the process of defining core WEF Nexus indicators as well as relevant co-benefits to be measured.*