

Technical Note on Data Analysis by the National Information Platforms for Nutrition

NIPN Global Support Facility



ABOUT THE NIPN

National Information Platforms for Nutrition (NIPN) is an initiative of the European Commission supported by the United Kingdom Department for International Development and the Bill & Melinda Gates Foundation. The initiative aims to strengthen national capacity to manage and analyse information and data from all sectors which have an influence on nutrition and to disseminate and use information so as to better inform the strategic decisions countries are faced with to prevent undernutrition and its consequences. A Global Support Facility has been set up by the European Commission to coordinate the NIPN initiative, managed by the Agrinatura alliance and hosted by Agropolis International.

DISCLAIMER

This technical note has been written by experts of the Global Support Facility for the National Information Platforms for Nutrition initiative. The findings, interpretations, conclusions, advice and recommendations expressed in this work are those of the authors and do not necessarily reflect the views of the organizations that host, manage or fund the Global Support Facility.

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<http://www.nipn-nutrition-platforms.org/IMG/pdf/technical-note-nipn-data-analysis.pdf>

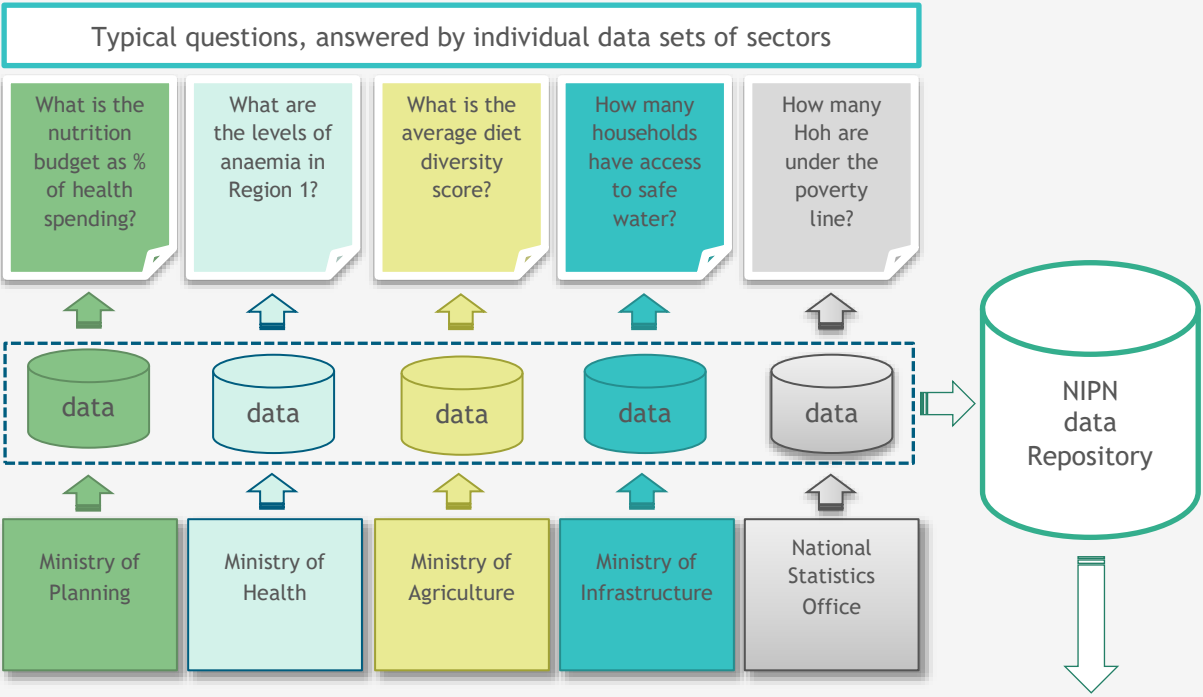
The strengths of the NIPN

In many countries, a wealth of information is available across the different sectors (health, agriculture, education, finance...) coming from different sources (national surveys, local surveys, program monitoring systems, financial data). Many of these data are typically collected, managed and analysed by sector by sector. These data are more rarely

NIPN's strength is to better use existing multisectoral data at both national and sub-national level to improve nutrition policies.

The idea behind NIPN is that the data analysis is driven by the demand from policy makers who formulate relevant policy questions.

Through NIPN, policy makers will be able to get answers to a much wider set of policy questions. The below diagram illustrates the added value of sharing data, for an in-depth analysis of nutrition-relevant information across sectors.



Typical questions suited to the NIPN approach

- Are the different forms of malnutrition found in equal levels of severity in the same districts and socio-economic groups?
- Which region has the fastest anaemia reduction rate over the past 10 years, and how can this be explained when compared with other regions?
- What is the coverage of nutrition-specific and nutrition-sensitive interventions in the region with the highest number of stunted children?
- Have the financial investments increased over the past 4 years for the 3 priority interventions, which were defined in the Multisectoral Plan of Action for Nutrition? Has the coverage of these 3 interventions increased over the past 4 years? Is there variation in coverage these interventions across different regions?

The limitations of NIPN

Policy decision makers are naturally interested in broad impact/causal questions, like “has investment in this program led to reduced anaemia levels?” To be able to draw a definite conclusion and assert a causal relationship, a number of conditions need to be met:

- A statistically significant **association** between the implementation of the nutrition program and the reduction of anaemia rates
- The investment in the relevant program occurred prior the measured reduction of anaemia (**temporality**).

This is however not sufficient to conclude on a causal relationship.

A person taking a coffee every morning before sunrise could conclude that drinking coffee causes the sun to rise. There is a perfect association and coffee drinking precedes sunrise. Yet no one would draw this conclusion!



Example provided by J. Leroy, IFPRI (<https://vimeo.com/285858777>)

Other factors need to be considered¹:

- **Plausibility**: the causal interpretation of the association observed needs to be coherent with existing knowledge. Knowing the laws of the universe, it is not meaningful to interpret the association between taking coffee and sun rising as causal.
- **Confounding** factors might provide an alternative explanation to the association observed and this needs to be verified

For instance, factors confounding a conclusion regarding impact of one intervention on anaemia levels could be the co-existence of another program with potential impact on anaemia reduction in the same population, or a lower malaria incidence due to reduced rainfall.



Without controlling the data analysis for all (known and unknown) confounding factors, it is not possible to attribute the reduction of anaemia levels to the nutrition intervention

While measuring an association and checking the temporality is relatively easy, controlling for all (known and **unknown**) confounding factors is very challenging, as data on confounding factors are often not available in population surveys. This typically requires a Randomised Controlled Trial in a research setting to compare rates of anaemia and numerous potential confounding factors between an intervention group and a control group (no intervention) before and after the intervention.

The NIPN is using existing data, typically national surveys or monitoring data that do not have a control group.

Without a control group, trying to interpret an association as a causal relationship can be very misleading. There is a high risk to reach the wrong conclusion that the nutrition intervention has an impact on anaemia while it has not or that the nutrition intervention has no impact on anaemia while it has. Taking public health policy decisions based on this sort of analysis can be very misleading.

Population survey data do not permit robust analysis of causal relationships or impact evaluation questions.

¹[Bradford & Hill \(1965\)](#) identified 9 criteria to consider causality

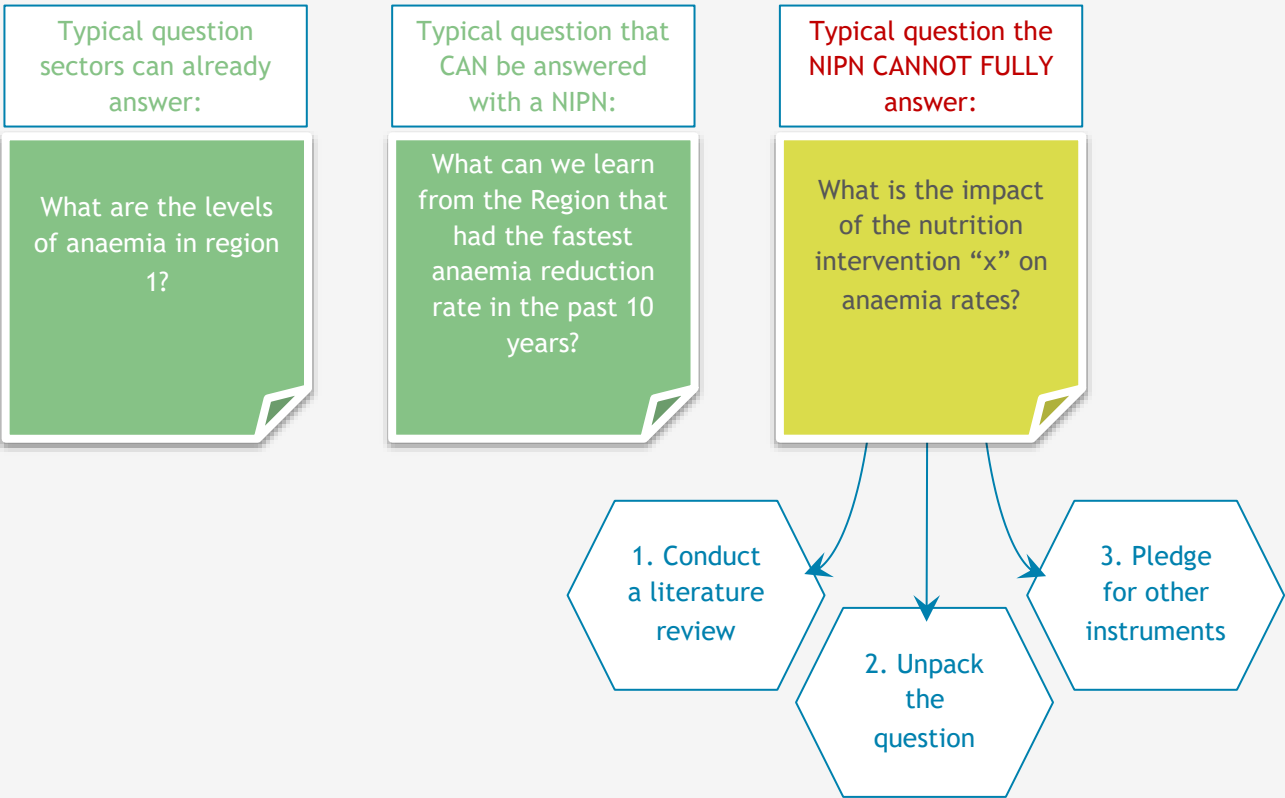
How can NIPN deal with impact or causal questions?

Even if the data available to NIPN cannot answer a causal or impact question, this does not mean it is a dead end:

- Firstly, there may already exist global evidence related to the impact question: NIPN may conduct or commission a global literature review.
- Secondly, a broad impact question can be unpacked into more specific questions which can be answered by NIPN. For example, the question of the impact of a nutrition intervention on anaemia rates can be broken up into the following answerable questions:
 - ▶ Have the financial commitments been really disbursed and utilised?
 - ▶ Did the program coverage improve in line with these disbursements?
 - ▶ Is the programme coverage coherent with the needs of the population?
 - ▶ Did the intermediate outputs increase or decrease (e.g. % WRA receiving iron-folate supplements?)
 - ▶ Did the intervention take place in an area with dietary deficiency in iron, where other possible causes (malaria, sickle cell disease) are less common?

The power of the NIPN is to answer policy questions by analysing the indicators along the multi-sectoral nutrition impact pathways, from inputs (investments, capacity), to outputs, underlying and intermediate determinant and finally to nutrition outcomes.

- Thirdly, the NIPN can advocate with other stakeholders for other complementary instruments to deal with the question. For instance NIPN can advocate for:
 - ▶ Inclusion of the question on the research agenda of research organisations
 - ▶ Carrying out an impact evaluation study on a specific nutrition intervention or program
 - ▶ Funding of a research thesis on the particular question or topic
 - ▶ Building collaboration with an external research organisation that is best placed to study the question.



Summary

This technical note has two main objectives:

1. Create a common understanding of what the NIPN can and cannot do in terms of data analysis, amongst all people involved in the data and policy components of the NIPN as well as members of the multisectoral advisory committee.
2. Support the NIPN teams in communicating what the NIPN can and cannot do in terms of data analysis to other stakeholders (including policy decision makers, sectoral technical experts, donors, FAO-FIRST policy officers or partners active in SUN networks).

This technical note summarises section 3.4 of the NIPN guidance note entitled “Principles and guidance for data analysis” that can be found here: <http://www.nipn-nutrition-platforms.org/NIPN-Guidance-Notes>

National Information Platforms for Nutrition is an initiative of the European Commission’s Directorate General for Cooperation and Development, also supported by the United Kingdom Department for International Development and the Bill & Melinda Gates Foundation.



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