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How can we better coordinate and make use of statistical training resources? A few reflections linked to the work of the Global Network of Institutions on Statistical Training (GIST)[1]

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Abstract. Reliable and timely data and statistics are more important than ever before. Data are being used in many contexts, often without a proper understanding of what they mean. Having visible and active national statistics producers is key to help ensure that the public receives information that is reliable and can be used for informed decision making. While many official statistics producers do their best, particularly those that operate in low-resource settings have limited capacities and lack sufficient training to respond to all needs.
A number of regional and international actors support statistical training, but provision is not always well coordinated or aligned with the prioritized needs of recipients. As a response to this, the Global Network of Institutions for Statistical Training (GIST) was established in 2018 with the aim to contribute to efficient, effective, and harmonized delivery of training. Since then GIST has developed various tools and guidance materials.
Moving forward, the national statistical system should take a stronger lead and set their own priorities for training needs and coordinate with partners to fill gaps. The developments in technology and tools can support this change through increased use of online materials and therefore independence to use what is most relevant.

Keywords: Official statistics, statistical training, GIST, national statistical system, SDG data

1. Introduction

The demand for official data and statistics has increased substantially at international level in recent years. The range and depth of data demands emerging out of the 2030 Agenda and the Sustainable Development Goals (SDGs) is unprecedented. The global indicator framework contains 231 indicators, addressing each of the Goals and targets of the 2030 Agenda. While the 2030 Agenda covers a number of topics that countries already are monitoring, it is quite specific in its indicators and how they should be measured. This adds to the complexity and has led to a need for adaption of traditional methods and approaches. In addition, there is a strong emphasis to leave no-one behind. To document how different population groups are doing, data need to be available at those disaggregated levels,

[1]The views and opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of the United Nation or the member of the Global Network of Institutions for Statistical Training.

such as by gender, age, vulnerability and many other factors. Therefore, the full implementation of the indicator framework to monitor the SDGs presents an enormous challenge for all countries.

At the same time, the traditional data needs of a country are still there and need to be met for national planning and decision making. While comprehensive, the SDG framework does not meet all interests and needs of international partners either, and many therefore come forward with additional demands, which adds to the complexity.

Producers of official statistics have traditionally had a rather low status and very little resources in most countries and did already struggle to deliver data according to policy demands when the requests were simpler. Significant efforts are therefore required to strengthen national statistical capacities to provide the necessary data and statistics for the full implementation of the 2030 agenda while at the same time continuing to serve other national and international data needs. The UN General Assembly, in its resolution 71/313, has fully recognized the crucial importance of data for sustainable development and the urgent need to strengthen statistical capacities in countries.

Statistical training is one of the key factors to help ensure that staff at National Statistical Offices (NSOs) and the wider National Statistical System (NSS) receive the training that is needed and build their capacities to do their jobs well. The Cape Town Global Action Plan for Sustainable Data highlights a number of areas where capacity development, and subsequently, statistical training is needed. This includes not only the traditional statistics production, but also coordination, user engagement, management and financing. All of which are important elements for a well-functioning statistical system.

At present, the approaches to statistical training at national level vary substantially, both in terms of resources made available for training and how training is organized. Several NSOs have training incorporated directly in their institutions, often part of the human resource units, while in other countries there are separate training institutes that are connected to the NSO to a varying degree. Others again rely mostly on external resources, such as universities and external regional and international partners. Ownership to and interest in ensuring sustainable statistical training programs at national level also varies. In countries where this is limited, the system is often very little developed which brings a number of challenges to ensuring proper training of staff.

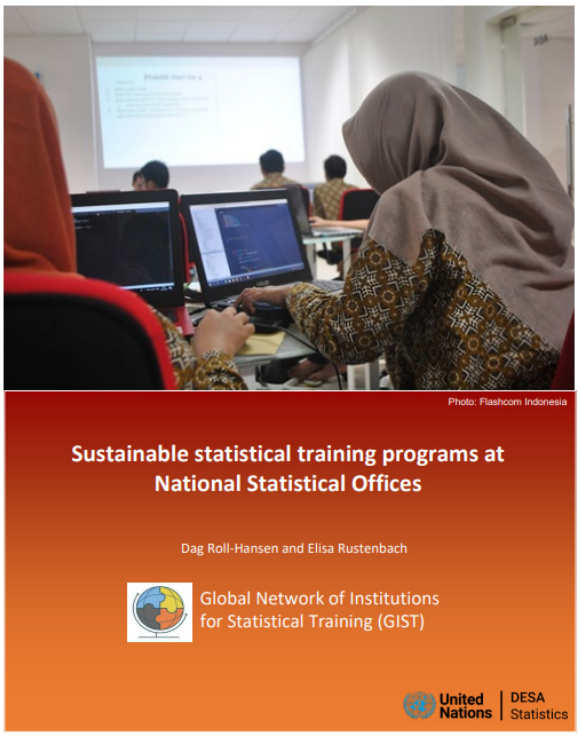
While many international and regional institutions work in this area, a quick scan of the current scenario in how training in official statistics is provided reveals diverse approaches. There is also much variation in availability of training in the different fields of work. While training in traditional data collection and processing generally is available, there is a high demand for, and less availability, of training that focuses more on the non-statistics skills such as coordination, management and engagement.

There is, therefore, a strong need for availability of full and current knowledge of the training offerings of various institutions both at national and international levels, to maximize their effectiveness, relevance and outreach, and to ensure that trainings fulfil the needs of countries and are delivered in an efficient and cost-effective manner that is based on demands from countries. The Global Network of Institutions for Statistical Training (GIST) was established in 2018 to respond to some of these needs and has since then initiated and carried out a number of studies and assessments among countries and partners on the current situation. As a response to priorities set by its members, GIST has also developed various tools and guidance materials, including a gap analysis on statistical training, an online hub for statistical training courses, a course evaluation guidance and, most recently, initial materials for establishment and maintenance of sustainable statistical training programs at national level.

This article will provide a more in-depth overview of the current structures and approaches in official statistical training both at national and international level. It will present key mechanisms in place to better coordinate statistical training, including the Global Network of Institutions for Statistical Training (GIST). Following this, suggestions will be made for how statistical training offerings and coordination can be further improved to better meet the needs of policy and decision makers for accurate, timely and disaggregated official statistics.

2. How statistical training is organized at national level

Most National Statistical Systems have a structure in place that is responsible for providing training. How this is organized, does, however, vary widely. This can be seen from a study which was conducted for GIST [1] building on earlier work by one of GIST's task teams (see below). In this study, 15 statistical offices and 7 regional training institutes where interviewed on their approaches to training in official statistics.



Picture 1. Front page of the report prepared for GIST on Sustainable statistical training programs at NSOs.

Structure and training offerings

The study shows that in some countries, training institutes have been established as separate entities under the government, in others they are units which are part of the NSO. Where those do not exist, there are often a few staff that are integrated in the overall work of the NSO, but there are also NSOs where there is no staff dedicated to organization or provision of training.

The size of the training entities varies substantially from only one or two staff to close to a hundred. The staff employed is usually larger in countries that have formal units in place, with dedicated trainers and support staff. Overall, training on statistics is provided not only to the NSO, but to the wider statistical system, but in countries where the training staff is not part of a formalized entity, this seems less common.

Another area where there is much variation is what the different training units offer. In some countries, the training entities offer full educational degrees in official statistics as well as shorter courses on specific topics, as for example in Senegal. The majority do, however, mainly focus on shorter courses that cover a certain thematic area. The extent to which these courses are formalized with defined curriculums and dedicated teachers, also varies substantially.

Understanding the needs

The formalization of course offerings and to what extent they are driven by the demand of users differs as well. While most countries have a process of identifying needs among employees, the level of involvement and identification varies. In some countries, assessments with varying degree of detail are carried out to identify their needs, in others, questionnaires are sent out to staff at regular intervals and in yet others it depends on the staff coming forward and identifying needs of their own. In countries that are heavily dependent on external partners, the course offerings will to a large extent be based on what is offered rather than on the needs identified by staff.

Assessing the capacities and skills of staff along with their training needs is probably the approach that provides the best overview of which statistical training courses should be offered. Among the countries that have provided information to GIST, the Central Statistics Office of Ireland (CSOI) is the one that is at present doing the most in-depth assessment. In its analysis process [2], CSOI has identified 13 key skill profiles that they need. Further, they have defined 5 levels of knowledge within each of those skills. They have used this to define the knowledge level necessary in each of the 13 skill profiles for each job description among the statistical staff of the organization. Having this in place, they annually conduct a gap assessment by asking managers to set the standard for the role and staff to rank themselves on these skills. Their training program is then created as a direct result of the gap assessment and a learning path is identified for each employee. Courses offered are created or sourced based on highest need.

Other countries are using simpler, but still quite informative approaches. A commonly used tool for assessing overall capacity for skills needed to conduct a household-based census or survey is the Tool for Assessing Statistical Capacity (TASC) [3]. It is designed to specifically target training needs across various operational areas in an NSO, including management, as well as provide an overview of capacities to manage, collect and disseminate data. Areas that are assessed as weak can then be prioritized for training. However, the TASC is not designed to measure the capacity of an NSO to conduct other types of surveys and statistics – business, agriculture, environment, etc. The tool is described more in depth in another article of this Journal.

While assessments provide a good overview, there are also potential challenges with them. They often include a limited number of questions which may not give

a full picture of training needs. They may also be incomplete if they do not cover the views of both staff and managers. If they are only filled out by managers, the needs may be misidentified as managers don't always understand what staff need or, if only filled by staff, the need of the organization may not get properly captured.

It is even less representative of needs though if and when training programs set their courses based on individual requests. Training will in effect often be tailored to the needs of a few vocal staff, rather than covering the needs of the organization as a whole.

Management ownership and resources availability

There is much variation in the ownership of management's commitment to training of staff, both within the NSO and at higher levels. This naturally influences human and financial resource availability. It also influences the time allowed for staff to take trainings.

Generally, staff are allowed to participate in trainings during working hours, but there is an expectation that homework and other tasks are carried out in addition. This may influence who is able to participate as not all are able to spend time outside working hours due to family and other commitments. In many NSOs, this is more common for women than for men.

In many cases, lack of management ownership for training leads to less resources, less structured training needs assessment, and poor course offerings, but there are exceptions. Training entities may have been established in the past and staff has remained in the positions. In some of those cases, training is still offered actively, while in others, training staff is left with little to do due to financial resource constraints.

Who provides the trainings

The approaches taken on who provides trainings also vary widely. Some statistical offices primarily rely on their own staff to provide trainings to colleagues. Others rely almost entirely on external trainers. Most offer a mixt based on availability and resources.

Internal trainers are usually senior staff that specialize in the area of work themselves. While an internal trainer often is an excellent resource to help ensure that the training is targeted to the actual work needed at the NSO, the challenge is often to secure these staff members to run the trainings. They are often busy people and their time may be prioritized for other tasks. In other cases, they may themselves lack the motivation to provide trainings as there are no benefits to them in doing so.

External trainers are brought in from different organizations. At national level they usually represent the university sector or private sector. Regional and international partners usually offer trainers from their own entities or hire consultants. In addition, more and more NSOs are benefiting from online courses that staff is encouraged to take.

A challenge that NSOs have highlighted with some of the external trainers is that the trainings are too general and not sufficiently targeted to meet their needs. This is in some cases counteracted by active preparation and agreement of training content, as well as through the use of data from the NSO.

Who is trained

Training is generally provided to all staff based on skills, interests and needs. In countries where there are no proper staff assessment systems and where training offerings mainly are based on active staff requests or what partners offer, it is assumed that trainings are less linked to actual needs.

There are a few areas of training that deserve special attention. One important area is training of new staff. They, in most cases, need to be provided with basic information on what official statistics production is and what is key to provide the data needed in a reliable way. Some NSOs provide targeted onboarding trainings to staff that include introductions to the Fundamental Principles of Official Statistics, the national statistical legal framework, quality assurance, confidentiality, engagement with users, data production tools and approaches to mention some. With this, the staff is more efficient and competent in their work. This efficiency gain is often not realized in countries with limited statistical capacity that do not formally train their new staff.

Staff development is generally important, but a targeted focus on training staff in skills to take on managerial roles, is something that NSOs are increasingly including in their programs. It is also important because most staff do not bring this expertise from their education. Learning how to manage projects, programs and staff may help in increasing the efficiency and deliverables of the NSO.

There is also increased focus on wider and coordinated training provision, ensuring that all staff of the NSS are being trained in statistical and related skills, not only the NSO or a respective partner ministry. Both the members of the NSS themselves and external partners are increasingly inviting participants from different entities to the trainings. Many NSOs, who often have a coordination role for the NSS, also encourage this as it allows for more experience exchange and network build-

ing as positive side-effects. Many NSOs have, however, also highlighted that they need training themselves in how to engage with other members of the NSS. This was confirmed in another recent report prepared for GIST [4].

While the above highlight some of the good practices, there are also practices that pose challenges to the provision of efficient training. In cases where training is linked to sitting allowances, some NSOs are more focused on who is entitled to these funds rather than on who benefits most from the training. Typically, senior staff are sent to the trainings while junior staff, who often are the ones who actually produce the statistics, do not have access to the needed trainings. This is particularly true when travel is involved. For trainings in the country, the challenges are instead linked to too many staff being sent to maximize sitting allowance. While the training is very relevant to some, others may not even have the prerequisites to understand the course. This requires trainers to focus on more basic levels of knowledge and skills, thus slowing progress. At the same time, these staff spend time on training that is not relevant to their work, therefore leading to inefficiencies.

Some statistical offices are also adapting to new modalities and offer their staff e-learning courses online during working hours. While this is not very common, more offices have moved in this direction during the pandemic. There is initial evidence that this allows a wider pool of staff to take the trainings provided, as long as they have access to internet and are allowed to take the courses during working hours. New approaches are also emerging with blended learning where staff take e-learning or virtual trainings, combined with local discussion groups, in some cases led by more experienced staff.

3. Role of regional training institutes

A number of regional statistical training institutes exist that have as main focus to provide trainings in statistics. The highest prevalence of such institutes is in Africa where most regions are covered by at least one regional training institute. This structure exists, at least partially, because African countries at some point expressed that it would be too resource intensive for them to have dedicated training staff and units at national level.

The Arab, Asia and Pacific regions each are covered by one or two regional training institutes as well. In Europe, the countries are jointly providing trainings under the organization of Eurostat. In the Americas, there are no dedicated training institutes, but the countries also engage with each other, often coordinated by the UN regional Commission.

In addition to the dedicated statistical training institutes, there are also a number of other regional actors that provide trainings in various fields of statistics. This includes the UN regional commissions, regional development banks and other regional or sub-regional entities. Most of these operate in a way similar to global actors and will be covered more in that section of this article.

The GIST report [1] interviewed representatives from seven of these regional training institutes covered and shows that the role of these institutes varies, as do their course offerings. Some of the training institutes in Africa, for instance, offer full degrees in statistics, as well as shorter, more specialized courses. Some offer longer courses with mentors and follow up with employers afterwards, but the most common are shorter courses.

As for the national training units, the approach to identification of training courses also varies. Some send out questionnaires at regular intervals, others respond to demand, yet others have more pre-defined programs or aim at identifying courses based on the overall big discussion topics in the statistics community.

The institutes have adapted to the pandemic situation in various ways. The majority of them are now providing virtual trainings with various approaches. In most cases it is a combination of pre-recorded materials or e-learning courses and live virtual engagement. Training institutes in regions with limited internet capacities offer virtual materials for download followed by a few days of work and digestion before the topic of the week is discussed in groups at specific points in time.

4. Global level

Since official statistics is a field that cuts across a number of thematic areas, there are several international organizations that specialize in a few selected thematic areas and who provide training in those. This includes UN agencies such as FAO, ILO, IMF, UNDP; UNFPA, UNICEF, UN Women, WHO, World Bank and many others. The statistical training offerings of many of these actors have increased substantially, first with the Millennium Development Goals and now with the 2030 Agenda as custodian agencies of SDG indicators.

Various NGOs, higher education institutions and consultancy firms add to the picture. So do National Statistical Offices who provide support to sister countries. Some of the most active include Germany, Italy, the Nordic countries and the US Census Bureau.

Some actors, such as statistical offices who provide twinning support, funders of large development programs in statistics such as the World Bank and entities that primarily work on data and statistics such as the UN Statistics Division, regional statistical commissions and the above-mentioned regional training institutes, have a holistic approach to statistical training. Their main aim is to develop the capacities of the statistical offices and systems overall to strengthen the national institutions in this area. The Partnership in Statistics for Development in the 21st Century (PARIS21), the Global Partnership for Sustainable Development Data (GPSDD) and other similar entities, while small, focus on just a few elements, also fit in this category.

Many other actors are, however, focused on providing training in their specific areas of interest, and do therefore to a lesser extent have a focus on, and capacity to, take a holistic approach when it comes to develop the national statistical system overall.

The UN Statistical Commission provides centralized guidance and recommendations on standards and approaches, with the UN Fundamental Principles of Official Statistics [5] at the center. There is, however, still much variation in approaches taken, such as in use of tools, methods and systems. Not specializing in one tool for a certain task is in most case inefficient, and particularly low-resource statistical systems have very limited capacity to take on the variety of tools offered. Nevertheless, they often accept all the offerings in practice as it allows them supplementary funding in the short run. This leads to less sustainable capacities developed and inefficient use of resources.

Coordination of activities, to avoid overlaps, mixed messages or large gaps in the capacities provided is, therefore, key. As specified in the Cape Town Global Action Plan [6]; "..., the role of international organizations and regional entities to the development of methodologies and data in their respective programmes must be conducted in full consultation and coordination with National Statistical Offices. Coordination and streamlining of these activities are necessary to avoid duplication of efforts and channel effort to furthering the Agenda."

The 2030 Agenda in itself also calls for development of statistical capacities overall. This is concretely highlighted through SDG Target 17.18: By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.

5. Working together to improve coordination of training – the role of GIST

Until recently, there was no structure for coordination of official statistical training efforts at global level that went across thematic areas of work. This made it challenging for actors to coordinate their approaches. As a response to this, the United Nations Statistics Division (UNSD) of the Department of Economic and Social Affairs (DESA) conducted a consultation process with a wide range of stakeholders on the establishment of a network of international and regional institutions that work on statistical capacity building.

In a meeting on statistical training held in Beijing, China during 13–15 September 2017, representatives of international and regional institutions engaged in statistical training and national statistical offices from several countries overwhelmingly supported the establishment of the network to be known as the Global Network of Institutions for Statistical Training (GIST) and proposed a road map towards its establishment and activities. Key agreed aspects of work were sharing of training calendars, course materials and best practices in training. This would be the first steps towards harmonization (in the sense of coordination and sharing information) of the statistical courses/curricula and their compliance with internationally adopted statistical standards and ensuring that the supply of training is in line with the priorities and needs of the countries.

Management structure of GIST

As can be seen from the original Terms of Reference for GIST [7], there were fifteen founding members, all representing international organizations and regional training institutes. Over time, the membership has grown, and GIST now has 22 members. A small number of NSOs that provide statistical training to partner countries have been included in the list of regular members. Members are managed by a chair that represents one of the member organizations and is intended to be rotated every two years. UN Statistics Division operates as the secretariat for GIST. In addition,

an advisory group was set up consisting of NSOs that would provide feedback on the work of GIST. It originally had eight members but was extended to 12 to strengthen the representation from the global south. In addition, the management structure also has a board which consists of the chair, the secretariat and leaders of each active task team. All members, including the advisory group, meet annually at the auspices of the UN Statistical Commission.

Priority areas of work

The terms of reference for GIST identified the following strategic action areas:

1. Conduct a preliminary assessment to redefine country needs in wake of the new demands arising out of the 2030 Agenda and SDGs;
2. Assess training gaps vis-à-vis the training needs of countries to systematically address them;
3. Systematically share training courses and calendars, training materials through a web-based platform;
4. Harmonize statistical training courses/curricula in line with international guidelines and standards on concepts and methods;
5. Build capacities of existing statistical training centers to deliver training on official statistics based on harmonized and standardized training curricula;
6. Promote training that enables data producers to improve data literacy and usage within stakeholder communities;
7. Develop and nurture pools of trainers in all regions on different statistical areas and maintain a roster of resource persons that can be used by countries as and when required;
8. Foster a global discussion on certification; and
9. Leverage capacity for increased use of distance learning

At the Annual GIST meeting at the UN Statistical Commission in 2020, it was also recognized that a tenth strategic action area should be acknowledged and specified, namely, *Build an international community of practice in statistical training*.

For the first two years it was agreed to focus mainly on information exchange, mapping activities and identifying issues and ways forward. This was organized in five different task teams. The first focused on stock taking, needs assessment and gap analysis; the second and third worked on the development of exemplars of a range of types of courses (basic and advanced level respectively); the fourth looked at potential innovation and technology use in training while the fifth considered outreach communication and statistical literacy. This resulted in a report that provided an overview of needs and gaps in statistical training that has since been used as a basis for some of the further work of GIST. Members also provided an overview of all courses they were regularly providing on statistical training which resulted in a static inventory of courses that is still available on the GIST homepages for reference. The fourth task team prepared a brief report on use of technology in training. A survey was also conducted on statistical literacy among policy makers to get an overview of overall knowledge and interest in data and statistics. All materials were presented and discussed at the annual GIST meeting at the auspices of the UN Statistical Commission in March 2019.

Several of the original task teams had a focus on mapping and stock-taking. With this in place, there was a need to be more forward looking and follow up on some of the challenges that had been identified in the initial work. Three new task teams therefore came into existence after the UN Statistical Commission in 2019.

Task team on statistical literacy

The initial task team five was continued, but with more specific focus on statistical literacy in the context of the 2030 Agenda. Members of the task team discussed where to focus the work and agreed to establish an inventory of literacy materials for official statistics. As of July 2021, the inventory is still in pilot form but is expected to be launched officially by the end of 2021 and will be featured on the GIST homepage. Initiatives featured will include statistical literacy materials developed by NSOs and other partners in official statistics. The materials will be split into target groups such as school children, teachers, journalists and policy makers. It will also be possible to select between different types of materials. In addition, some of the members of the task team, with the lead of the UN Institute for Training and Research (UNITAR), have developed an e-learning course on improving statistical literacy and core statistical and data skills for policy makers [8]. Another article in this issue provides more details. UNITAR and UNSD are actively engaged in the work of this task team. They are also developing brief learning videos on the role of NSOs in provision of reliable statistical information to society that is expected to be available by the end of 2021.

Task team on online gateway and e-learning community of practice

A new task team was established to follow up on

Picture 2. The UN SDG:learn statistics platform allows selection of materials along different dimensions, including along main statistical categories and Sustainable Development Goals.

the inventory of courses. The task team named Online gateway and e-learning community of practice, has two main areas of focus; i) the development of an online gateway or hub where courses by different providers continuously can be made available and ii) learning and exchange on the use of e-learning in statistical training. A key aim for the gateway or hub is to make it easier for users, to find learning materials in official statistics. Instead of having to visit and navigate on the homepages of various agencies or go through the vast amount of information on search engines, those interested in statistics training will have one go-to page.

Within a few months of existence, the task team decided to establish a statistics page under the umbrella of the newly set up UN SDG:learn platform which is hosted by UNITAR and the UN System Staff College and has over 40 different members. The statistics page on UN SDG:learn [9] was launched at the UN Statistical Commission in 2020 and currently showcases around 65 statistics courses in different fields and by different providers. It also features various microlearning materials, that is brief learning videos, quizzes, platforms or similar items that are meant to give an introduction to a specific topic. To make it easier for users to find what they are looking for, the materials are structured along a few key categories; the SDGs; the type of learning material and; the main categories of the Classification of Statistical Activities (CSA). The statistics part of the platform is managed by the GIST secretariat which approves materials before they are made available online. Work is still ongoing to add more materials.

The task team has also been discussing evaluation of courses and materials, both related to UN SDG:learn statistics and in more general terms. The work has led to two concrete outputs. One is a template for book-style reviews of e-learning courses that members can use to provide further input on courses on the UN SDG:platform. The second is a brief guidance on evaluation of statistics courses. The guidance [10], follows the structure of the Kirkpatrick model [11] and provides some suggestions for approaches to evaluation. Several of the members of the task team have, in addition, provided their materials for course evaluation.

Task team on addressing NSO demands

The third task team, addressing specific NSO demands, is following up on the initial stock-taking and needs assessment report developed in 2018 and 2019. Through a number of discussions, the task team initially developed four case studies that highlighted mismatches in supply and demand. Two case studies showed challenges and potential approaches to address those when

there is a surplus of supply. Two others highlighted examples where there is not sufficient supply. The two areas highlighted were training needs related to coordination of the national statistical system and the establishment and maintenance of sustainable statistical training programs at national level. The task team agreed to dig deeper into the two latter. The value of doing so was later also confirmed by the GIST advisory group. Consultants were hired to interview a number of NSOs and regional statistical training institutes and provide findings based on this. Some of the work and findings, particularly related to how statistical training currently is organized at national level, has been referred to earlier in this article.

The report on Improving Training on the Coordination of the NSS [1] provides a proposal for what to focus training information on when engaging with members of the NSS. It further proposes developing NSS training materials at the global level.

The main recommendations from the report Sustainable statistical training programs at NSOs provides four main areas of follow up and further development:

1. A repository of training material and tools that can be used as a global common good.
2. An overview of a standard set of training courses to potentially cover in a training programme.
3. Development of a set of recommendations for setting up and maintaining a national statistical training programs.
4. Strengthening and clarifying the role of regional and international organizations in building training programs at country level.

As has been stated above, the task team on online gateway is already progressing on the first recommendation on a repository of training materials, having established UN SDG:learn statistics. Proposals two and three resonated well with the task team and it was agreed to further progress the work on those. As of July 2021, three documents are in final stages of development: a draft suggested standard set of training courses that a NSO could include in their course offerings; a proposal for how to establish and maintain national statistical training programs and; a report on use of e-learning at NSOs. The task team will continue the work based on these materials, and, where relevant develop additional tools and guidance materials. Members of the task team have also secured resources and plan to test implementation according to the proposals in the near future.

As can be seen from above, the work of GIST is to a large extent focused on developing practical level materials that can help improve efficiency and coordination in statistical training. A positive side-effect of the work is that the members are more aware of what others are doing and also initiate collaborative projects together. The above-mentioned e-learning course on statistical literacy and microlearning videos are just a few examples of this.

In addition to the work of the task teams, it was agreed at the annual meeting of GIST in 2021 to more actively reach out to the statistical community to make the work of GIST and its tools and guidelines more widely knows. Hopefully this in itself will also lead to increased coordination and use of best practices in training moving forward.

6. Coordination mechanisms that may support and enhance harmonization of statistical training

Regional and global expert groups and networks

GIST is specifically focused on training in and for official statistics and therefore particularly relevant. There are a number of different initiatives that cover different areas of statistical training, however, that also should be mentioned as positive contributions to the need for improved coordination on statistical training. The ISI itself and its different sub-entities do focus on elements related to all statistical development, education and training and provide many useful resources and platforms for professional exchange.

There are also a number of expert groups and materials related to resource development under the UN Statistical Commission. While training is not the primary aim of the groups, much of their work is very relevant to statistical training. The Inter-Agency and Expert Group on the SDGs (IAEG-SDG) generally is at the forefront when it comes to providing guidance and materials on SDG monitoring [12]. A thematically focused expert group that currently has a strong focus on joint development of training materials is the UN Committee of Experts on Big Data and Data Science for Official Statistics. One of their task teams focuses on Training, competencies and capacity development [13]. It has members from eight NSOs and more than ten international institutions who are currently jointly developing e-learning materials on how to use various innovative data sources for official statistics production. There are also a number of more thematically focused expert groups that work on learning materials for the NSS. In addition, there are many recommendation

and guidance documents that have elements of training guidance. A recently updated, central guidance tool is the Handbook on Statistical Organization [14].

Networks that focus on experience exchange and learning across countries are also emerging. One that was recently established is the Collaborative on use of administrative data for statistical purposes [15]. It has members from around 25 NSOs and 20 regional and international entities and takes a cross-cutting and process-oriented approach to use of administrative data with a strong focus on experience sharing and learning across countries. While not statistical training in its standard form, it offers NSOs and their partners to come together and discuss and share approaches which has a strong element of practical learning. The Collaborative is also developing materials and tools that are meant to contribute to statistical training for countries that are less advanced in the field, and particularly staff in entities that own the administrative data, often entities that are members of the NSS.

UN coordination at national level

With the UN reform, the focus on UN coordination at national level is substantially strengthened. The newly established Resident Coordinator Offices (RCOs) almost all have one staff member who is an economist and one who is a data management and results monitoring officer. While there is a large number of areas to cover for these offices, there is now a centralized focus on data and statistics by the UN at national level. The work is twofold for most RCOs; they need data to report on progress of the SDGs and other development frameworks and they, together with the rest of the UN Country Team (UNCT), support strengthening of national institutions, including the national statistical system.

In practical terms, for coordination of assistance, the UN Development Assistance Framework (UNDAF) is a key tool. The UNDAF is a strategic, medium term results framework that describes the collective vision and response of the UN system to national development priorities and results on the basis of normative programming principles. It describes how UN Country Teams will contribute to the achievement of development results based on a common country analysis and UN comparative advantage. Focus on achievement of the 2030 Agenda is a key part and in many countries the focus on data and statistics development related to this has been strong.

A challenge that remains is that there is limited statistical capacity among UN staff in many countries. The lack of understanding of what official statistics is about puts limitations on the extent to which these officers can play a role in coordinating activities according to the guidance of the UN Statistical Commission. As a response to this, the Committee for the Coordination of Statistical Activities (CCSA) is currently developing training materials targeted towards this group.

Use of Yammer for official statistics exchange

Another response to the need for better coordination and experience exchange among statisticians and international and regional partners is the establishment of the Global Network of Data Officers and Statisticians. The network is established on Yammer, a social media platform that is mainly used for professional exchange and with monitored access, and has, as of June 2021 around 1500 members from all over the world. Members include national statisticians at various levels, representatives from UNRCOs and UNCTs as well as from regional and global UN agencies working on official statistics. All members can ask questions and provide responses, and they can share various news and materials. Various learning materials are also provided, including information on new e-learning courses.

7. Substantial needs, many which are not met

Earlier in this article, the current approach to statistical training of 15 NSOs was summarized. In this section, an overall summary is given on some of the challenges with coordination, and supply and demand of statistical training. As outlined above, due to the nature of statistics as a cross-cutting field, there are many actors involved in training in official statistics and there is much material and training offerings available. There is, however, still a way to go to cover the training needs that are there in lower-income countries, particularly as the demand for statistics has increased substantially in the last years mainly linked to the 2030 Agenda.

Many statistical offices are still highlighting that there are a number of needs that are not met and the reason for the gap is multi-fold, having multiple facets both at the receiving end and the supplier side.

On the receiving end, there are many examples of lack of ownership and interest in statistical training at managerial level. Many of the managers have themselves not been trained in the potential efficiency gains of training or do have too many other things to focus on. There is therefore a lack of strategic thinking on training which leaves training units, if they exist, to

deal with more ad-hoc requests and offerings. Linked to this, training is then also often not provided with the best of the institution in mind but is rather based on the interests and pro-activity of staff.

Linked to this, who receives the training is then also less thought through. In cases where there are sitting allowances or travel benefits, trainings may be offered to staff based on who deserves the benefits rather than who can make most use of the trainings. A typical bias that occurs is that senior staff are prioritized over junior staff who could have benefited more from it. Further, unless there is a requirement or plan around it, staff will often not on own initiative share what they have learned which further reduces the benefit of the organization to the training.

A challenge that adds to the complexity is that staff with good skillsets are more attractive on the labor market. Management may therefore include this in the equation when they consider training provision for their staff. They may rather have less efficient staff that stay for longer periods of time than spending time on training staff which is then quickly hired by other entities.

In contexts where there are little organized approaches to trainings, there is also a lack of creativity and proactivity when it comes to making use of technology and tools that are available in a global context.

In countries where there is managerial ownership to training and where systems are in place for organized training plans and career development, there are also much less gaps in training needs.

On the supplier side, partners often have their own programs and priorities and provide training based on that. In many cases this coincides with identified training needs of the NSS in countries but may not be at highest priority. In other cases, the trainings are not sufficiently adapted to the actual knowledge level and needs of the countries which limits the success of implementation. Another, related challenge is that decisions on which tools and methodologies to use and provide training on is often decided on by the partner which leads to the countries having to deal with a number of different approaches reducing efficiency and capacity to do their core work.

Coordination is also a challenge, both on the recipient and supplier side. Members of the NSS are not used to and experienced in coordinating among themselves so that training is given to all who need it and new skills learned are used to the best effect. Partners, while increasingly sharing information, for instance through UN Country Team exchanges, do also still have a way to go when it comes to involving relevant partners at national level in trainings, while at the same time avoiding an overload of participants that have little or no benefit from them.

In a global context, donors tend to focus on the same countries which leads to training supply that may be difficult to absorb in some countries while others are more left to themselves and support provided by regional training institutes. Changes in priorities or mechanisms to even this out would be helpful to ensure that training is covered more widely.

8. Proposals for the future

The article so far has shown that there are a number of actors that provide statistical training, including the statistical offices themselves, but that there is much variation in the extent to which training needs are being met and how. Many statistical systems, particularly in developed contexts, fulfil the training needs through internal and external sources, but in lower resource settings there are still many gaps in statistical training. Some of this is related to the system partially being supply driven, rather than demand driven, a second reason is lack of coordination between actors and a third is lack of ownership or understanding of the importance of proper investment in training of staff. There are a few approaches that could be taken to help overcome some of these challenges to better cover the training needs.

National leadership

A key element to ensure well trained staff is that there is a clear plan for training at national level. For this, the management of the NSO and wider NSS need to have training as a priority both in terms of staff time and financially. Training should ideally be something that management encourages and clearly lays out as something staff should be engaged in and can spend regular working hours doing, of course within certain limits. As part of the strategic thinking, management should focus training on what is needed for a well-functioning national statistical system rather than what each individual sees as important.

Management does also have a responsibility to ensure that trainings offered is provided to those who need it rather than based on who's turn it is to receive sitting allowances. In this context, turning down trainings that are not needed or not a priority should also be considered. Sending staff to trainings that do not lead to positive change in performance and outputs is a waste of resources and reduces the efficiency of the statistical office.

There are a few areas that may need special attention and focus for training. Having a plan for new employees, ensuring that they understand their tasks and can carry them out as needed is generally seen as a good investment. With increased focus on the NSS rather than the NSO, and low statistical capacity in many of the entities that form the NSS, a coordinated and focused approach on ensuring a minimum level of statistical knowledge across the system could also be a good strategic approach in many countries. Third, it may be useful to have a strategic approach to training in non-statistical skills that nevertheless are important for well-functioning statistics production such as communication and user engagement, management, financing and human resources.

Partners can play an important role in highlighting the need of structured statistical training programs to NSS managers at regular intervals and support them in the implementation both financially and by responding to the gaps identified.

Developing national training needs plans

A holistic approach to training aiming to fill knowledge gaps in the organization is key. As part of the strategic thinking, managers of the NSS entities can jointly develop a plan for statistical training needs and discuss how these needs can be covered internally and in collaboration with partners. The plan could, where relevant, be linked to national priorities in national development plans and form a part of the National Strategy for Development of Statistics (NSDS). Linking it to these strategies may also be helpful in ensuring that resources can be secured to fulfil the training plan.

As part of the recent work of GIST, a document with a proposed standard set of courses is under development. The idea of this is to provide an overview of types of courses to consider, from the statistical thematic area courses to those that are more cross-cutting on use of tools and methods or on non-statistics skills such as communication, management or coordination. The idea of this proposed standard set of courses is for statistical training entities to use this as a starting point to see what is needed in their own context. They can identify the needs and, based on that, set up a prioritized list of needs. This can also help identify more systemic needs such as onboarding trainings for new staff or refresher trainings in certain key concepts.

With a training priority plan at hand, they can first identify internal course providers. Those can be experienced staff or staff that recently has undergone trainings by partners. To increase the interest and willingness to take on such tasks, the staff can be offered a bonus leave day, increased chances of being promoted or similar smaller non-financial benefits. For remaining gaps, the training staff can discuss with external partners what they can offer. The use of virtual learning materials can also play a role in this. Some statistical training units at national level, such as Brazil or Norway, are already taking a similar approach, but it is at present quite uncommon in low-resource settings.

The approach would allow for a more demand driven system where the NSS themselves prioritize their needs and identify partners that can work with them rather than taking what is offered without a longer term, systemic approach that would be more beneficial to institutional development.

Identifying needs of staff

An overall suggestion to all statistical systems that do not regularly assess the training needs of their staff is to start doing this. The above description of current approaches outlines a few different options for consideration. A simple approach is to ask all employees and team managers what training needs they have. Based on this, a training plan can be set up that reflects needs of the organization overall. There are a few broader capacity assessment tools such as the TASC which can be used as a starting point for this, and where needed, complemented to also reflect areas not covered by the tools.

Another approach is the one taken by Statistics Ireland who have created a defined number of staff profiles and specify which training each of these profiles should have. Staff are encouraged to take trainings in the areas they don't already fulfil through prior training and skill development.

This process can also help identify which trainings are not needed or where there is less need because staff already have the relevant skillsets.

Increased focus on non-statistical skill development

Traditionally training for the NSS has been focused on courses on various statistics production and use of related tools and methodology. This is key for the statistical outputs, but for the NSS to function well in a broader context, there is also a need for training in other, related skillsets. This includes trainings on communication and user engagement; coordination with other actors, particularly the NSS; management of staff, projects and regular production and; engagement with policy makers and financing. These are typically skills that staff in the NSS have not learned in professional training and

where even basic skills can make a big difference. Lack of these skills is also continuously highlighted by staff as a challenge.

A challenge in this area has been that there is no partner who has this as their specific field of work and it has therefore taken longer to realize these needs, and to respond to them. In recent years some partners have started respond more actively to these needs and some courses are already provided or made available online and more are in the pipeline. GIST has also discussed this and how partners can come together to jointly support remaining gaps. Joint development of materials through the task teams may be one alternative.

Partners to coordinate better and respond to identified needs

Many partners are already trying to respond to the needs identified by the countries that do not have sufficient capacity to meet their own needs. Where countries come forward and specify their needs, partners almost always try to find a solution to respond. Due to funding constraints and prioritizations of donors, this is, however, not always possibly and may never be. There may be approaches that could help structure the needs and response moving forward though. If national agencies start using a prioritized training plan, partners would have a better overview and could plan better for which trainings to provide. The prioritized training plan can also be used to approach donors and other partners where the is no capacity to respond to the needs right away.

The UN RCOs can also support the national statistical system in the coordination of trainings to be provided by different agencies in the system. They can do so by reaching out to agencies they know could provide support in the area or by pointing the members of the NSS to relevant agencies or online materials.

On the financing side, the Bern Network is promoting the establishment of a Clearing house for financing development data. This could potentially also be used to help channel demands for statistical training to relevant partners and donors.

Another aspect of the adjustment is to increasingly adapt the trainings to the level of development and concrete needs that countries have. In the past, there has been too much of a one-training-fits-all approach which leaves countries with gaps in necessary skills. Taking a practical approach that is relevant to statistics production is something that NSOs appreciate very much. Shorter sessions with concrete tasks to complete in between training sessions, followed by new training sessions is also an approach that could be used to a larger extent. While this is more demanding for the training providers, it does also leave more lasting results.

Partners should also apply a more flexible approach in the use of methodology and tools and allow the NSS to prioritize which tools they want to focus on. An example is the use of statistical software tools such as R, SPSS, Stata and others where each partner provides training and codes for different tools and the NSS ends up with some skill in each, but not sufficient in-depth and transferable knowledge among staff in any of them. Where there is not sufficient maturity for prioritization of tools in the NSS, partners could jointly work with members of the NSS to identify prioritized tools based on sustainability and capacity. Following that, all should strongly be encouraged to only use those tools unless there is an agreement to switch to something different, for instance a new, better tool.

Many international and regional entities provide support through projects on specific areas or fields of work where the scope is limited. Within those, there should as far as possible, also be flexibility to adjust to the concrete needs. More projects should also be designed to include non-statistical skills such as communication and coordination.

Increased flexibility from donors

Most donors have priority areas of work as well as priority countries. The challenge with the current system is that a number of donors have the same priorities which leave some areas of work and some countries to a large extent out of the picture while other areas are overwhelmed with too many offerings. Increased flexibility from donors combined with better coordination may help training being spread out more so that also current areas can be better covered in statistical training.

At the same time, a challenge that many face in low resource settings is that sitting allowances play an important role in what the statistical system agrees to be trained in. This is understandable as salaries are low and all additional income is appreciated. It is disruptive to efficient training provision, however. Where possible, donors could therefore play a role in limiting sitting allowances, so that the focus is moved to which trainings are most needed and to training being offered to those who actually work on the topic rather than an assessment of who deserves the sitting allowance most.

Virtual training that can be used by all

New technologies and tools open up for new modali-

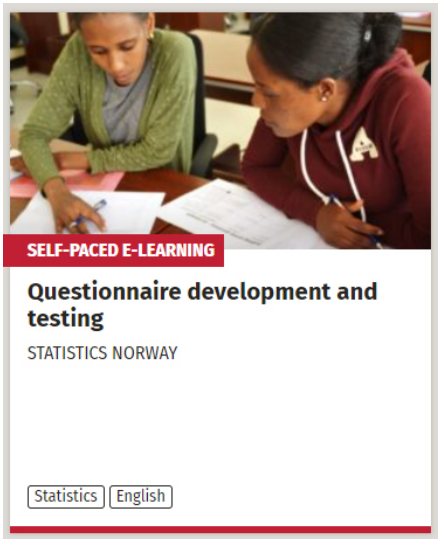
ties in statistical trainings. Particularly the availability of online training resources gives many new opportunities. E-learning courses are usually available at no or comparably low cost and can be taken when convenient to the student, unless facilitated. These courses can be good resources if in-person trainings are not available.

Mixed mode approaches can also be considered to enhance the learning. Some partners provide facilitated trainings or combine the e-learning with follow up in person. Where this is not the case, it is also possible to set up local discussion groups among those who take the courses. Such groups could be organized by the statistical training units and a senior staff or external partner familiar with the topic could lead the discussion. A few NSOs report that this already has been practiced with success. While many of the e-learning courses are rather generic, they provide a good starting point that then can be further elaborated upon and adjusted to local needs. Many of the e-learning developers will also be happy to provide remote support to help increase the learning and ensure implementation of the new skills.

It may, however, be difficult for users to navigate all the different pages of different organizations to find what they are looking for and there may be providers they don't know about. As an example, Statistics Norway has recently developed an e-learning course on questionnaire design and testing which many actors have been highlighting as an area where more training is needed [16]. Many countries and partners do not know that Statistics Norway offers this and may therefore loose out on a training that is very relevant to their needs.

It is therefore key to make it easier for those looking for courses to navigate. As was specified earlier, GIST has responded to this need through the establishment of the UN SDG:learn statistics hub with the aim of providing an overview of courses available, and providing links to the relevant course pages. In addition, there is a page for microlearning materials that provides links to other relevant training and learning materials. This can include brief learning videos, quizzes, learning platforms and similar. The abovementioned inventory of resources on use of administrative data for statistical purposes is an example of a resources featured. Another is a video on how to calculate SDG indicator 8.10.2. [17].

The idea is for the hub to be used by those organizing course plans at national level to get a better overview of what is available when there are gaps that can't be filled otherwise and they may also contact course providers they are not familiar with to see if more targeted courses could be offered. Individual staff and partners can likewise use the hub to identify courses they are interested in and either agree with the employer to take relevant courses during working hours or spend their free time to build more competencies.



Picture 3. The e-learning course development by Statistics Norway on Questionnaire Development and testing is linked to from the UN SDG:learn statistics pages.

For the global statistical training community such a hub also allows everyone to see what others already offer. This can reduce duplication of efforts and can also make it more visible where there at global level still are gaps in statistical training offerings.

What is key, however, is that as many as possible contribute to the content on the hub. Here GIST members and other partners still have a job to do to ensure that more courses and materials are added and kept updated.

9. How can it be achieved?

Many have proposed improvements to capacity development and related statistical training before and may be skeptical as to whether the above proposals can be achieved. However, the current time with stronger emphasis on data needs, a pandemic that has led to shifts in approaches and an overall push towards improved coordination may be sufficient to at least achieve some of it.

Key will be that the managements in NSS entities step up and work towards holistic national training programs, that partners support this by responding to demands as far as possible while at the same time also making more materials available to a global audience.

As part of this, GIST and its members will continue the work to provide general tools and guidance materials that support more effective, efficient and coordinated training efforts.

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