



Photo: Joy of learning, Dag Roll-Hansen

Sustainable organisation of statistical training programs

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for the



Global Network of Institutions for
Statistical Training (GIST)

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Executive summary

As outlined in the full report following this executive summary, a national training programme should enable staff to produce statistics for evidence-informed decision making and inform public debate at the national level, as well as reporting progress on the Sustainable Development Goals (SDGs) and other international and regional initiatives.

The quality of statistics to a large degree depends on the abilities of the employees. Training can improve the performance and productivity of the staff and ensure they have the relevant skills to produce statistics in line with the United Nations Fundamental Principles of National Official Statistics. This report discusses and recommends ways to establish sustainable training in statistics, building on the work of the Global Network of Institutions for Statistical Training (GIST) and an initial assessment based on interviews with a number of countries that have different approaches to statistical training at national level. The report is funded by the UN Statistics Division.

Key proposals include:

a. Organising training in National Statistics Offices (NSOs)

The NSO management ought to be part of the training process. Without management ownership, it is not likely to succeed. The management also has an understanding of both the existing competence in the organisation and of what the needs of tomorrow will be.

Lack of funding is a challenge for training and capacity development. It not only makes NSO unable to pay for training, but also puts strain on staff making it difficult to find time for training others and learning, as well as paying for local costs associated with receiving training from regional training centres and international organisations.

A training programme or centre is a crosscutting task and may be best administered under the Department of Human Resources in an NSO. The course organisation consists of several elements. Trainers must be identified, as well as training facilities and course participants. It is important to find a way to motivate the trainers, find out when in the work-cycle to do the training and how to make sure that new skills can be used immediately.

Training needs can be identified, prioritized and a plan made to supply what is needed. This can form the basis for learning pathways, guiding the professional development of the individual NSO staff member. Training ought to be given when staff have the time to train and learn, preferably just before new skills can be used.

Exchange of ideas and experiences between NSOs is also valuable to start using e-learning to build capacity in a cost-efficient manner.

b. Providing training

New technologies have facilitated exchange of training material and communication across borders and continents. This opens new perspectives on how training can be conducted. Not all courses need to be developed locally and conducted in a classroom. Even though face to face training has many advantages, we should further strengthen initiatives aiming to share training material and enhance distance learning. Internet-based training courses could be an integrated part of the training programme. This may give a significant increase in access to training. Some NSOs report that a turn to virtual training caused by the pandemic has helped them fill the need for training as the cost of virtual training is generally lower than the cost of classroom training.

Coordination among providers of training to NSOs is needed to give them access to a comprehensive set of training they can use to fill their gaps in line with national priorities. A coordinating body could look at the demand of statistics offices and negotiate a division of tasks between them on who should be responsible for different parts of the statistical production. This division of responsibility at

the global level could be reflected in development of training material and technical assistance to the country level. Lack of coordination makes it difficult for NSOs that rely heavily on training from outside to get all the courses they need.

A recommended standard set of courses for NSOs could be established, taking into account the need to have training for staff at different levels, including both level of expertise and length of employment. Soft skills should be included as a natural part of the NSO standard courses. The standard courses ought to be periodically reviewed and updated.

When training is given as part of a development project it is often not based on the needs and priorities of the NSO. As an example, many projects come with training in field work, regardless of whether this is a need in the NSO or not. Trainings given as part of projects must be aligned with the training program of the NSO.

The focus of regional and international organisations has so far been to supply training, they do not usually help countries organise training programmes. In the future, NSOs and NSSs may also benefit from more hands-on cooperation on how to organise locally relevant training programmes and building national capacity to train.

Regional training institutes and international organisations have their specific mandates, and hence provide support and courses within specific areas. Even though a few of them offer training in soft skills, this is not their primary focus. Hence, from the NSO perspective, the offering of training in soft skills is limited. The same is the case for training for new staff. Even though such training will often need a degree of adaptation to each NSO, there are still generic elements to it that can be developed by regional and international organisations.

c. Sustainable courses

Adults often want training that is directly relevant for the task they are going to solve. Hence, training aimed at solving a task or a problem motivates participants and will often be put to use after the training has ended. Focusing on internal motivators will make it easier to recruit learners that participate in order to learn rather than external motivators like money. Training could lead to something, like visibility, interesting tasks, accreditation or be part of a career path. At least training should be more than a diploma on the wall.

Motivation and opportunity to take part in training will influence the composition of participants. Selecting participants to attend training ought to be based on their training history, position and duties at the NSO. It is often considered an advantage to ensure equal opportunity to participate in training for both women and men.

Trainers need to be empowered in their role as trainers. The role can give visibility and allows them to cooperate with and learn from colleagues. By being involved in training you may increase your own network and promote yourself internally. An important qualification of a trainer is to inspire joy of learning among students.

In many organisations there is belief that giving away knowledge may weaken your position or make you redundant. If staff members have seen colleagues weaken their position as a result of sharing knowledge, they are less inclined to do so themselves. To change this, staff must be convinced that sharing knowledge is more likely to strengthen than to weaken their position in the organisation.

Work in an NSO requires a combination of practical and theoretical skills sometimes cannot be found at universities. Many NSOs are requesting material that can give them practical solutions related to the production of statistics. Structuring trainings in a pedagogically sound way, enhances the benefit learners have from the training. Presentation techniques can be used to mediate the content to course participants in a way that helps them learn. Having one or two assistant trainers increases the possibility someone will be able to teach the course, even if the original trainer is no longer available.

Training of trainers can contribute to building sustainable capacity among internal NSO trainers, enabling NSOs to repeat courses as needed to fill prioritised gaps.

All courses could be evaluated with an aim to improve them. To learn to improve pedagogical practises, it may also be helpful for trainers to receive positive feedback, to learn what training methods learners appreciate. This can help trainers know what techniques works, not only what does not work. Evaluation of the impact training has on work is important, as training only has value if it improves work.

Skills have to be used to be developed. If an NSO wants to train staff in e.g. R, this is a continuous learning process. The ones knowing it can be used to train other colleagues in the NSO. Champions or super-users can train others and learning teams can be established to enhance professional development.

Way forward

Organising training programmes is a national responsibility, but valuable support to NSOs and NSSs is given by regional training institutes and international organisations. A key challenge is to structure the cooperation to ensure that the national needs for training to produce official statistics is accommodated, and that NSOs and NSSs are positioned to define their needs, setting NSOs in the driving seat of the training agenda.

Introduction

A national training programme ought to build capacity to produce statistics in a wide range of areas. It should aim to enable staff to make statistics to fill the needs of evidence-informed decision making within national governments and inform public debate. Further, it should aim to build skills needed to report progress on the Sustainable Development Goals (SDGs) as well as other international and regional initiatives, adhering to the United Nations Fundamental Principles of Official Statistics.

The quality of statistics produced by a National Statistics Office (NSO) to a large degree depends on the abilities of the employees. Hence, making sure the staff has adequate skills is crucial. Training can improve the performance and productivity of the staff and ensure they have the relevant skills.

The management must be part of the training process. Without management ownership of training, developing sufficient capacity may be challenging. The management also has an understanding of both the existing competence in the organisation and of what the needs of tomorrow will be. A principal task of the management is to bring out the best in people: Find out what an employee does the best and make him or her do it even better.

This report discusses social and organisational structures influencing training programmes and recommends ways to establish sustainable training in statistics. It looks into development of courses that can be repeated with minimal effort and combined in a training programme. Further, non-economic incentives to motivate students and instructors are discussed, as well as recruiting participants that benefit most from the training regardless of gender, age and status in the organisation.

The report was commissioned by the Global Network of Institutions for Statistical Training (GIST) and is a follow up to the report Sustainable Statistical Training Programs at NSOs¹, and builds on interviews with a selected number of countries as well as two remote workshops with representatives from international agencies, regional training institutes, NSOs and other partners. The report is funded by the UN Department of Economic and Social Affairs, Statistics Division (UNSD) who also acts as a secretariat for GIST.

¹ <https://unstats.un.org/gist/resources/documents/Sustainable-statistical-training-programs-at-NSOs.pdf>

Background and methodological approach

During the months of December 2020 and January 2021 consultants for the Global Network of Institutes for Statistical Training (GIST) conducted interviews with 15 countries and 7 regional training centers with the objective of investigating how training is organized at NSOs and how they are supported by regional training centers². The report resulting from these interviews highlighted four recommendations:

1. Establishment of a repository of training materials and tools that can be used as a global common good on an international multilingual platform.
2. A standard set of courses to give NSOs a starting point to identify training needs and develop a training programme.
3. Development of international recommendations for establishing or growing a sustainable training program in NSOs.
4. Strengthening and clarification of the role of regional and international organization in building country level training programs.

As a follow up to these recommendations, two workshops were held in February 2021 focused on the second and third recommendation. The workshops included approximately 25 participants each from NSOs, regional training centers and international organizations. Participants were broken into five discussion groups and each group had an hour to discuss the below questions.

Workshop on standard set of courses for NSOs:

1. What topics should a standard set of courses at every NSO include?
2. What soft skills courses are essential to an NSO training set of courses?
3. What courses would you consider essential for employees to take on the first year on the job?
4. How can NSOs identify clear training needs and how can international organizations meet key needs?

Workshop on organisation of training programmes:

5. What steps can be taken to ensure every course is developed in a way that is sustainable - can be retaught with minimal effort?
6. How can a few individual courses be built into a full set of courses over time?
7. What are non-economic incentives to motivate students and instructors?
8. How to ensure the right people attend courses - gender balance, younger staff represented and courses are applicable to required skills?

The purpose of this report is to provide recommendations for a standard set of courses as well as organisation of training programmes at NSOs resulting from the workshop discussions. The outcome of the workshops was supplemented by interviews with NSOs to gain additional insight in NSO perspectives.

² <https://unstats.un.org/gist/resources/documents/Sustainable-statistical-training-programs-at-NSOs.pdf>

1. Why build a training programme?

Having the necessary competence is crucial to any NSO. It can be built through various kinds of training. The need for training can be identified based on existing competence within the NSO. To work in a NSO you need a combination of practical and theoretical skills that most often cannot be learned through formal education. Training staff to have the right skills hence often is a challenge. This is why NSOs often establish training programmes to give their staff the training needed. Effective training may be particularly important when hiring new employees or when the tasks or the technology at hand are changing.

An internal training programme is often a cost-effective way of organising training. There are several reasons for this:

1. training can be scheduled at your convenience
2. training is more focused, consistent and relevant to your needs
3. travelling and accommodation costs can be reduced
4. knowledge can be passed down within the organization

Training courses may be designed and carried out by the NSO's own employees, national experts or foreign experts. Internet-based training courses should be an integrated part of the training programme, as it can provide a rich variety of courses and is often cost-effective.

The need must be identified based on existing competence in the NSO. An important aspect in building the right competence is to find out what the different employees are good at and like doing that is important for the NSO. Then they should do more of this and learn it even better.

The difference between what competence you have and what you need is what you ought to focus on achieving. To find out what is needed, a needs assessment or gap analysis may be conducted.

The course organisation consists of several elements. Trainers must be identified, as well as training facilities and last but not least: the course participants. It is important to find a way to motivate the trainers, find out when in the work-cycle to do the training and how to make sure that new skills can be used immediately.

The gain of successful training can be found on two levels, both on the personal and the organisational. For the individual more competence may give increased responsibility, more interesting work, higher salary and a future career. The organisation will be less vulnerable, have increased efficiency and higher productivity. When the staff has the right skills, it will be easier to get the job done with sufficient quality.

A training programme or centre is a crosscutting task and may be best administered under the Department of Human Resources. The directors of the different departments may give input on what courses they need. The management should prioritise the suggestions for building competence according to plans and budget limitations.

NSOs working to strengthen training and develop capacity relate to a complex reality, making the task multifaceted. Each NSO has its own strengths and weaknesses, but many struggle with financial constraints, hierarchical or inefficient organisations, lack of motivated staff, lack of prior skills among learners and lack of potential trainers. This report is based on workshop discussions with representatives from international organisations, regional training centres and NSOs, in addition to interviews with NSOs and regional training centres. The aim of the report is to shed light on some of the issues raised and suggest some considerations moving forward.

2. Developing sustainable courses

An NSO can start with few individual courses before developing a complete set of curricula. This will lead them to a better way to find a more robust syllabus after having feedback from various participants. As an example, newly recruited staff can be trained in basic ideas of official statistics, data analysis, data presentation and dissemination techniques. Improved feedback from participants, a comprehensive syllabus for the official training courses can be developed which will be offered to the future generation. This is a way forward suggested by the Central Bureau of Statistics (CBS) of Nepal.

Supply and demand; fit the training into an NSO strategy

NSOs both produce their own training and receive training from regional and international organisations as well as bilateral donors that often have their own priorities or specific objectives. It is key to integrate training supplied by external providers into the training programmes of the NSO in a way that helps fill their training needs. Sometimes it is a challenge to match the training given by donors with what is needed by the NSO, both because donors pursue their priorities and because some training is in short supply. This may be particularly challenging when training is given as part of a project, not based on the needs of the NSO. As an example, many projects come with training in field work, regardless of whether this is a need in the NSO or not.

Pieces of training done by consultants are often tied to surveys. There is low technology, one training is given for each survey, and they are not seen in relation to each other. The training is not reusable at the NSO and generally only used once there. The immediate need (i.e. survey) defines what training is given, not the long-term needs of the NSO. The institutional need for creating a training body is key.

Rajiv Ranjan, Technical Programme Advisor, PARIS21

NSO training needs should define the training agenda, rather than individual projects. A step on the way could be to use training material from the NSO, integrating project specific elements, when conducting a standardised survey.

Regional and international organisations use different ways to identify NSO needs. Some send out questionnaires with regular intervals asking NSOs to report what their needs are. Other organizations offer their services by presenting a Terms of Reference (ToR) for the training or asking the NSO to draft one. Others use workshops to align their training offerings to the needs of the NSOs:

We suggest curricula to answer country demands, validate it with workshops. We also present the curriculum to other countries with similar demands.

*Mamadou Cisse, Training Officer,
African Institute for Economic Development and Planning (IDEP)*

Some NSO needs are quite specific, creating a need to align the learning objectives with needs in great detail. In other cases, the training offered is more general, with less need for interaction between the NSO and the training provider to specify training needs. The collaboration between regional and international organisations and NSO also depends if the NSO has a dedicated training unit or not. Training units in NSOs generally have a role in aligning expectations and organising

courses. The High Commission for Planning, the NSO of Morocco, tries to select new topics, that they can later give in-house when offered training from international partners.

Organisations that have been operating for a number of years, generally have a substantial amount of training material available. Regional and international organisations have a wide array of courses developed, that can be retaught, after being updated and adapted to context if need be. Whenever a training is provided by an international organisation or a consultant, one or preferably two national staff members could act as assistant trainers, building capacity to conduct the training at a later stage. Material made available to the global community could further benefit other organisations than the ones developing the material.

Many NSOs do not use their own staff to train colleagues. There are multiple reasons for this, e.g. lack of knowledge, lack of time to teach, lack of incentives to train others or disincentives to share knowledge. These explanations why training is not happening are relevant to some degree in most NSOs, and often exist in combination, making sustainable training challenging. Nevertheless, some NSOs are actively working to solve these challenges, promoting a culture of training and learning. Both the Central Statistics Agency of Ethiopia (CSA) and the State Statistics Service of Ukraine (SSSU) are working to enhance training by internal trainers, e.g. by training them in structuring and presenting learning material. The aim is to strengthen their own supply of trainers in statistics. SSSU also has an Academy of Statistics, which provides training for SSSU, including its territorial bodies and also gives training to other countries, like Azerbaijan and Morocco.

We need more sustainable training conducted by ourselves, but in the beginning it will be very difficult to do everything ourselves. So, at the starting point we need the experienced organisations to help us establish the system, develop curriculum, to work with us until we are well capacitated, then CSA can take it over.

Aberash Tariku, Deputy Director General, CSA Ethiopia

Universities and other academic institutions also take part in developing training in statistics. An example of this is the European Master in Official Statistics (EMOS), a joint project of universities and data producers in Europe providing post-graduate education in the area of official statistics at the European level. Another example is the Palestinian Central Bureau of Statistics and the Malawi National Statistics Office both working with universities to have relevant training for their staff. If local statistical institutions exist, developing partnership on training can be fruitful to make better use of scarce resources.

Some NSOs have weak technological infrastructure, and training provided ought to be adapted to meet these limitations. This is particularly relevant for e-learning and other electronically supported learning like e.g. streaming of videos where limited bandwidth may be a challenge. To make it possible to utilize material already developed in low-resource settings, technological limitations should be considered. The Grenada Central Statistical Office reports that an array of virtual courses are available, but that lack of internet access limits staff access to them.

Timing of training should be given some consideration. In Nepal, CBS has recently revised their national account series and planned for training on national accounts before the revision. Unfortunately, staff did not get the training until after the revision was done, and were not able to benefit from and practice what they learned during the revision.

Some NSOs have assessed their needs, and have specified what topics they need training on, asking donors to provide specific courses. This can e.g. be the case if an NSO has developed a list of courses they are asking donors to contribute to. Donors often have priority areas to support which does not necessarily match the needs of an NSO.

Even though priorities of NSOs are generally anchored in national strategies and development plans, the priorities may change as a result of changes in the NSO management or the national government. In Myanmar, partners perceive there is a risk in investing in areas that are not clearly specified in the NSDS, even before the unrest initiated in February 2021.

The focus of regional and international organisations has so far been to supply training, they do not usually help countries organise training programmes. In the future, NSOs and NSSs may also benefit from more hands-on cooperation on how to organise locally relevant training programmes and building national capacity to train. Regional cooperation on statistical capacity building may also help adapt training to fit the needs of NSOs and NSSes in a region.

Regional cooperation on statistical capacity building in the Caribbean

The Standing Committee of Caribbean Statisticians (SCCS) constituting the premier forum for statisticians in the small islands and low-lying states of the Caribbean Community (CARICOM) started cooperating to build statistical capacity in the late 1970s, and based on an assessment of training needs, of countries, made recommendations to establish the Caribbean Institute for Statistical Training and Research (CISTAR). CISTAR aimed to meet the statistical needs at all levels and to also undertake applied statistical research to develop statistical measures, focusing on improving the production, dissemination and analysis of statistics. Recently, the SCCS has proposed the establishment of e-CISTAR, and an electronic platform for Statistical Training and Research in the Caribbean has been developed as a foundation to provide access to training and to enhance the availability of statistical resources to the statistical systems of the Caribbean.

Organising training programmes is a national responsibility, but valuable support to NSOs and NSSs is given by regional training institutes and international organisations. A key challenge is to structure the cooperation to ensure that the national needs for training to produce official statistics is accommodated, and that NSOs and NSSs are positioned to define their needs, setting NSOs in the driving seat of the training agenda.

Training sometimes leads to disagreements. There can be inconsistencies between the supply of training from international organisations and regional training centres and the demand from NSOs. Disagreements can also be triggered by competition for access to training at the NSO level. In both cases conflicts can be caused due to limited access to training, and may partially be solved by a significant increase in access to training.

NSOs often face similar challenges in establishing training programmes. The Philippine Statistical Research and Training Institute (PSRTI) advises countries in the process of establishing training programmes to cooperate with other countries having similar programmes, both on organising training and participating in courses. PSRTI also emphasizes that support for a national training programme has to come from the government, in order to be prioritized and have the resources necessary to succeed.

Enhancing learning outcome through training of trainers

Structuring courses in a pedagogically sound way, enhances the benefit learners have from the training. Presentation techniques can be used to mediate the content to course participants in a way that helps them learn. These skills are relevant both when developing a course and when further developing existing training material. The skills can be taught in training of trainers-courses and can

be a step on the way to build a strong internal group of committed trainers, a Faculty of trainers. Having more than one expert being able to deliver each training course is part of making training sustainable. Having one or two assistant trainers increases the possibility someone will be able to teach the course, even if the original trainer is no longer available. If a training is first given by an external expert first conducting the course with the help from an assistant teacher, the assistant can gradually take responsibility for the course. When the assistant becomes the main teacher, he takes on a new assistant. This can be a way of ensuring the continued competence and development of NSO staff.

Skills have to be used to be developed. If an NSO wants to train staff in e.g. R, this is a continuous learning process. The ones knowing it can be used to train other colleagues in the NSO. When skills are actually used for delivery of work, training of trainers generally works well. Training of trainers does not necessarily work equally good when there is a one-off training, e.g. on leadership training. Then you need to interact with each participant individually on leadership. CSA in Ethiopia have used training of trainers to develop the pedagogic and presentation skills of their staff, mostly used for training for regular surveys, fieldwork and data collections.



From a training of trainers workshop at the Training Centre of the Central Statistics Agency of Ethiopia, February 2020 Photo: Gudrun Jevne

The Central Statistics Office (CSO) of Myanmar is currently training 16 experts from different parts of the organisation to conduct courses and support other trainers. This training of trainers (ToT) training is accredited by a training academy in Australia, giving the participants international accreditation as trainers. In Morocco the High Commission for Planning, the NSO, uses its own staff as trainers as far as they have the necessary qualifications. Finding qualified trainers may be challenging, e.g. in statistics, economics and especially digital transformation. An advantage of using own staff is that they have thorough knowledge about practical production of statistics. Experts in thematic areas do however often lack training skills. Hence, NSOs give training of trainers courses to help them to structure the courses pedagogically. Below is an example of topics relevant for trainings aiming to structure courses in a pedagogical way.

Structuring courses pedagogically

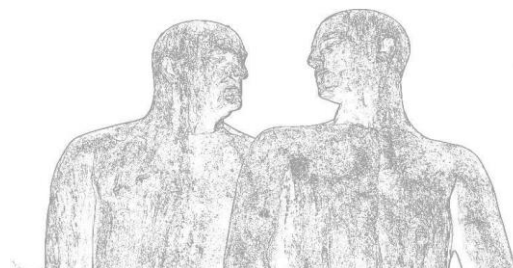
- **Learning objective:** This could e.g. be to get a deeper knowledge of a new topic, or to learn enough to be able to use what you learn in your daily work.
- **Target group of the training:** including what competence the learners have from before, their motivation to participate, preferred learning style, if they have time and space for study, how many and what their expectations are.

- **Resources:** Do students have sufficient time for attending the course? (In conflict with the working day? Enough time to go through the content planned?) Space (How many people in the room? Hearing and seeing from the back of the room, number of chairs, air-conditioning?) Practical resources (Training centre, computers? Flip-over/black-board, white-board?) Financial resources?
 - **Content:** What do they need to learn to reach the learning objective? Selection; time for all the content? In what order? On what level and detail?
 - **Teaching methods:** Student preparations (E-learning, read a book, watch an instruction video, students preparing for performances for the rest of the class), Activities in classroom (PowerPoint, flip, discussion in groups and in plenary, visualization, storytelling, case solving), Students online after class (Discussion in online groups, handing in papers, testing, showing others), Structure of training (how the different teaching methods are combined, e.g. by having intense training for a few consecutive days vs shorter sessions with breaks and homework), Share ideas, reuse good practice.
 - **Evaluation: Have you reached your learning objective? (Remember to have targets that can be measured; plan the evaluation questions at the same time as you find your main target),** Evaluation as you teach (Check if students are understanding and following your lead. If not; continuously improve your teaching techniques), Evaluation after the course (Always know why you are evaluating. Must be used to make improvements)
-

It is key to develop effective learning with well-defined learning objectives. A good way to make it systematic is using a quality assurance framework. The quality assurance framework could include gap analysis, defining learning objectives, feedback mechanisms etc. Going through the main steps you can check what learning objectives are met. Some knowledge and concepts remain relevant for many years, others do not. It is also a good solution to make courses available globally, as long as the national context is less important.

Social learning has proven to be effective. Hence it is often useful to establish communities of people who have learned the same at the same time and can continue to develop their skills together. When you have been facing a challenge together and have been able to find a solution, you develop both individual skills and institutional learning. Staff learning together are often referred to learning teams, meeting regularly to find solutions to challenges and develop their skills. In addition, champions or super-users can be used to train others.

It could be possible to strengthen the role of regional training centres in offering pedagogic services to NSOs. This could entail helping them define their needs, consult the countries on what their needs are and use it to adjust the training they offer to the NSOs. For large international organisations, it may be more difficult to adapt to regional needs or the needs of the individual NSO.



Social interaction enhances learning

If training addresses challenges people face in their daily work, learners generally have more motivation to learn and benefit more from the training than if the training is not adapted to the context of the learner.

There is always room for improvement of training, and trainings must be evaluated as part of the effort to continuously improve them. Collecting feedback from learners is key to structure the training in a way relevant for their work. Some NSOs systematically assess trainings. In Senegal, all trainings are evaluated by the students, filling out a form at the end of each training. If they have some complaints, the evaluation is sent to the teacher and he is asked to improve the class. If their evaluations are not improving the second year, the teacher is replaced. To learn to improve pedagogical practises, it may also be helpful for trainers to receive positive feedback, to learn what training methods learners appreciate. This can help trainers know what techniques work, not only what does not work. In Morocco, the High Commission for Planning evaluates trainings with a questionnaire right after the course and then again after six months, to find if trainings improve their work or not to adjust next year's training. As training only has value if it improves work, evaluating its impact on work is valuable³.

Adapting material to a national context

Material may need to be adapted to fit the national context. It may be necessary to adapt the material to fit work processes used, terminology, administrative systems and classifications. Further, when training for a survey, a topic-specific training component must be included. Finally, the material must be culturally acceptable, and have illustrations and real-life examples that fits the context. Material suggesting how to adapt trainings to national contexts can be developed, including customizable learning toolkits specifying how to include national examples and procedures. Other trainers in the NSO should have access to the material and supporting material and the possibility to adapt it. Trainers could have the freedom to adjust trainings, based on instructions and recommendations. The Philippine Statistical Research and Training Institute (PSRTI) offers Customized training courses to agencies with specific training needs. When PSRTI designs the courses, they use the data from the requesting agency or agency to be trained, to be able to simulate and adapt the training to the needs of the agency as far as possible. In Nepal, the internal experts of the CBS giving training to some extent use materials developed by other organizations as reference material.

Courses must mirror the current best practice within an area and keep up with recent developments. They should also be useful for personnel in other parts of the National Statistical System (NSS), from basic to advanced level.

Training modalities; face-to-face or e-learning

Face to face training has been the dominant modality of training, ensuring close interaction between the trainer and the learners. Which training method to use depends on the learning objective. If interaction between students is key, face-to-face training would often be the preferred modality. This can be the case if discussions, brainstorming or performing in front of the class is important to reach the learning objective, or if the subject at hand changes rapidly or needs substantial national adaptation. Under such circumstances developing and using existing e-learning may not be cost

³ Global Network of Institutes for Statistical Training; An introduction to evaluation of statistical training courses <https://unstats.un.org/gist/resources/documents/Evaluation-guidance-doc-GIST-AM.pdf>

efficient, although developing customizable learning toolkits possible to adapt and replicate may make use of e-learning more efficient.

Which method to use also depends on the target group of the training. Learners that are not computer literate, generally prefer face-to-face training. This form of training may also be easier to adapt to multiple languages, something that may benefit learners that are not fluent in English language.

What resources are available influences the choice of learning method. It is easier to opt for face-to-face training if there is a shortage of functional computers and limited access to Internet, especially if you have a training venue at your disposal.

Face-to-face training often happen outside the office, whereas e-learning may be taken at the desk of the learner. This may make it easier to combine work and training, but also take focus away from training.

Both e-learning and face-to-face training come in varying quality and deciding which teaching method is best is can be challenging. Resent metanalysis⁴ suggest that the learning outcome of the two modalities varies. The analyses generally find either that there is no difference in the learning outcome or that the outcome of e-learning is slightly higher. Further, the pedagogical dimension and the possibility to engage learners must receive particular attention in e-learning. Some of these challenges can be mitigated thorough the use of various forms of blended learning.

Training modalities; self-paced or facilitated, recording lectures, multi-platform delivery or blended learning

Recently there has been a raise in alternative ways to give training, mainly various types of electronically supported training. The new modalities offer more flexibility and can be combined in various forms of combining different training methods, also known as blended learning. An example of blended learning can be to give students material to prepare before a training, focusing the interaction with the trainer towards discussions, solving assignments and clarifying questions. Blended learning often makes use of various combinations of video-lectures, podcasts, e-learning courses, quizzes and assignments, blended with activities taking place in virtual or physical classrooms, like discussion, problem solving or lectures. People learn in different ways, and often benefit from having content mediated in more than one form. Hence, using blended learning is considered to be effective. Using a combination of e-learning and conventional learning, can also make training flexible, and easier to combine with performing duties at work.

Self-paced training allows the learner to train on his or her own convenience and does not require a trainer. A commonly used form of self-paced learning is recorded video-lectures. They can be recorded from an ordinary lecture, and hence come at a low cost. Then they can be made available for new learners, or for course participants that want to see it again.

⁴ <https://www.sciencedirect.com/science/article/pii/S0260691716303227>;
<https://www.sciencedirect.com/science/article/pii/S0020748912004592>;
[https://www.hersindia.org/journal-archive-pdf/Journal-2014/Vol-2-Issue-00/20140712-Vol2-Issue2-\(ii\)-018-027-Sharad.pdf](https://www.hersindia.org/journal-archive-pdf/Journal-2014/Vol-2-Issue-00/20140712-Vol2-Issue2-(ii)-018-027-Sharad.pdf); <https://www.tandfonline.com/doi/full/10.1080/10872981.2019.1666538>
<https://bmjopen.bmj.com/content/9/8/e025252.abstract>;
<https://www.sciencedirect.com/science/article/pii/S0260691716001234>;
<https://link.springer.com/article/10.1007/s11423-018-9633-7>

Massive open online courses (MOOCs) is another self-paced training modality, available to anyone on-line. It requires an initial investment to produce, but it has the potential to reach many learners. A disadvantage with MOOCs is that it has little room for interaction between trainer and learner, and it is challenging for the learner to clarify what he or she does not understand. The Central Bureau of Statistics of Nepal has started using MOOCs to some degree, but has a problem using it related to field-work, as internet coverage is limited. The Central Statistics Office of Ireland is systematically recording courses to build a library of training video staff can use at their own pace. The Philippine Statistical Research and Training Institute (PSRTI) has initiated developing a system where research and training related reports and materials are stored.

Women have benefitted from increased participation in training resulting from more flexible training modalities. In many countries it is more difficult for women to take part in face to face training than it is for men, resulting from women often having the responsibility for looking after children or other family members. Further, in some cultural contexts it is not considered appropriate for women to travel for training. Having training at the workplace within working hours, makes it easier for women to participate. The same is the case for self-paced e-learning that can be done at the convenience of the learner.



Online training in cognitive testing of questionnaires for the Gender Asset Gap survey in Ethiopia, October 2020 Photo: Ellen Cathrine Kjøsterud

Facilitated training, whether online or face-to-face, is suitable for courses that need more interaction between trainer and learners. These can be combined with self-paced training, e.g. by giving the learner a MOOC, a video-lecture or a text to read before the training, allowing for discussions, asking questions and giving feedback on assignments in the facilitated classes.

To have sustainable training, it must be possible to reteach a course with minimal effort. Reusing training material is cost efficient and presenting the same content in multiple modalities will make it possible to reach more learners. We find an example of this in the African Institute for Economic Development and Planning (IDEP), where lectures are recorded, and the recordings are made available to the participants along with presentations from the course.

Soft skills and training for new employees

Training for new staff and training in soft skills are not at the core of the mandate of any of the international organisations and regional training centres providing training in statistics. Hence, these topics do not tend to be prioritized, especially in times and situations where tough priorities have to be made. This often makes topics like communication and presenting statistics neglected, though they are key topics in statistical production.

Previously we practically had no communication between departments. Every department worked towards their own goals, not the goal of the organisation. Different statistics learned work processes from different countries, making their statistics incompatible. A methodological commission, coordinating both internally and with other organisations has improved the situation.

Vadym Pishcheyko, advisor to the Head of the State Statistics Service of Ukraine

New staff need to learn to know the organisation, both regarding how information is flowing, ethics, duties and responsibilities, IT-systems, possibilities for training, possible careers, as well as the statistical production. This encompasses all the small things that make you thrive in an organisation. Many NSOs do not have this kind of training.

There may be periods when training for new employees is not required because of a ban on government hiring. For instance, around 2020, both Malawi and Mozambique had such a ban. However, plans and curricula for training should exist so that new staff can be trained when the ban lifts.

Language

A lot of training material is developed in English language, excluding staff not fluent in English benefiting from it. Increasing availability of training material can be done by translating material to multiple languages or developing or collecting existing material according to language. This can be facilitated by more cooperation across countries sharing a common language. Common curricula can be developed and shared. As an example, countries in Latin America could each take responsibility for developing training material to specific parts of a shared set of courses. This could avoid duplication of material produced, leaving room for national adaptations as need be.

3. Building sustainable training programmes

Courses on various topics aim to give participants valuable knowledge in different topics. An NSO does however have a wide range of needs for capacity building that must be catered for in order to secure the statistical production process. Having a systematic approach to training is helped by creating a training programme. The Central Statistics Agency of Ethiopia aims to build sustainable and organised training that can be repeated on an annual basis, supported by a system for course administration, a set of courses and training facilities. Today, most training is however given on an ad hoc-basis. The Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística, IBGE), the NSO of Brazil has a staff of 25 people dedicated to develop, implement and evaluate capacity-building solutions for the institute and in some cases to provide open courses to the society. They give the following piece of advice to NSOs starting to build training programmes:

There is a popular saying that says that “the great is the enemy of the good”, it means that it is better to do something, even if it is not perfect, even if it can be improved later, than do not start... Start small, but start. Get people engaged. A good training is one that the attendees like to participate, learn from it, but, above all, a good training is one that leads them to apply what they have learned, put into practice in day-to-day basis. For this, the support of top management is essential, so that there is an incentive to practice what has been learned, even if it represents new ways of doing things.

*Ana Cristina Martins Bruno, Head of Planning and Management unit
and teacher at the Statistical School at IBGE, the NSO of Brazil*

Some NSOs rely on external government academies to supply them with training, like e.g. in Ukraine and Kyrgyzstan. These may supply quality training in a range of relevant topics, but experience shows that NSOs still need additional courses specific to their needs that may be difficult for external Academies to provide.

Building a whole

A training programme consists of a wide range of courses, covering the main skill-sets needed in an NSO. Some of these courses are available at the NSO or from national and international organisations they work with, others are not. The HR-department in an NSO is often responsible for providing the training needed. Unfortunately, they are not always proactively looking for training to fill all needs and training may also be difficult to find. Often training exists - both nationally and internationally - that is not made available to staff that needs it. In Morocco, the High Commission for Planning reports a need to improve coordination on what they can deliver internally, with other contributions from national partners and international organizations, as this is sometimes a challenge.

Having coordination mechanisms is key to make us deliver as one, and GIST is important in this respect.

*Mustafa Sadni Jallab, Head of the Research and Training Division, African
Institute for Economic Development and Planning (IDEP)*

There is no guarantee courses in all main topics will be available without coordination between regional training centres and international organisations. The organisations may benefit from learning what training colleagues in other organisations are supplying, in order to improve coordination. Program documents of the NSOs can also give insight into their priorities and needs. National Strategies for development of Statistics (NSDS) and Global Assessments from Eurostat,

every 5th year can provide useful information on aims and goals of the NSO and hence where help is most needed and wanted. Often the cooperation with large international organisations like OECD, World Bank, IMF and Eurostat is more like a one-way-road; if they e.g. are interested in environment statistics, it is not relevant to them if the needs of an NSO are in statistics on production of services, transport or something else. Some organisations are interested in providing training in GDP-statistics, even if the challenge of the NSO is in price statistics. Cooperation ought to be a two-way-road, discussing and clarifying needs and priorities.

GIST is a wonderful opportunity because the network can exchange ideas and practices related to training with other institutions.

*Bianca Walsh, Coordinator of Training and Development at the
National School of Statistical Sciences, IBGE, Brazil*

A set of courses can be both demand and supply driven. Sometimes there is a demand for a course in an NSO, e.g. if organisation wants use big data for statistics and don't know where to start. It can also be supply-driven; "We think this can be useful to you". Generally, supply-driven training is difficult to match with NSO needs. It can however be useful when an organisation does not know of a topic that might benefit them. Either way, a demand-driven set of courses will often look very different from a supply-driven.

There is often an element of political economy in training, mentioned by the Global Partnership for Sustainable Development Data: Sometimes there is a power struggle between countries and regional training centres. Countries that are higher up the ladder in terms of their skills, sometimes have better resources internally to actually deliver the trainings that the regional training centres are providing. Another aspect of the political economy is funders: The donors generally prefer to fund countries directly over regional statistical training institutes. That creates an imbalance between the NSOs and their training needs, and the regional training institute and their training offers. There is no space to have that conversation and to balance the powers, something that may create a mismatch between what the countries need and what the regional institutes offer. In other cases, NSOs are satisfied with the short-term training offered by regional and international organisations, like in the example from Grenada presented below.

Short-term training in Grenada

Central Statistical Office of Grenada receives a varied offering of courses from international partners, covering many of the areas the office needs to build capacity. The courses last from some days and in some cases up to two weeks. The courses are perceived to be relevant and of high capacity. They do however give more knowledge transfer if they are linked to an ongoing statistical activity, than if they are not used shortly after the training. The short-term trainings are good but is not perceived to give the participants the qualifications that would enhance their upward mobility in the organisation. Further, it may not enable them to give training of the same quality to their colleagues as they can get from international experts.

Training in the CSO is now given as virtual courses. If a person goes abroad for training you lose her for the period of time she is studying, and there is no guarantee that she will come back to the office. Even if there may be many advantages with face-to-face training, they do not outweigh the advantage that people also work when they are attending virtual training.

Coordination among providers of training to NSOs is needed to give them access to a comprehensive set of training they can use to fill their gaps in line with national priorities. A coordinating body should look at the demand of statistics offices and negotiate a division of tasks between them on who should be responsible for different parts of the statistical production. This division of responsibility at the global level should be reflected in development of training material and technical assistance to the country level. Developing countries have offices of many international organisations, but NSOs report that there seems to be little coordination among them.

The data revolution and training in Senegal

The data revolution gives new challenges for NSOs, creating a need for capacity in new areas. Many NSOs find it difficult to build sufficient capacity to accommodate the need. In Senegal, the Ecole nationale de la statistique et de l'Analyse Economique (ENSAE), a school within the NSO, is answering this challenge by updating their training programme by establishing a bachelor's degree for data analysts and a Master degree forengineers in statistics . It is however challenging to find teachers adapting to the new technology.

ENSAE is also providing education for people who are working within the area of statistics, providing all kind of training requested by the NSO, mostly using internal trainers.

Training material as a common good

A standard set of courses points to topics NSOs generally need training in. The set of courses needs to be supplemented with training material. Although some national and regional adaptations of the material may be needed, a lot of the material is relevant globally. Other material is relevant for

specific regions or resource settings. Hence, there is a potential in developing training material as a common good, shared among NSOs, to be adapted, further developed and used.

If you have developed a training, you don't need to keep it in your pocket. You can show it to the whole world, let everyone use it.

Vadym Pishcheyko, advisor to the Head of the State Statistics Service of Ukraine

If there is an aim to control the quality of the training material and define some of it as authoritative, this requires coordination among producers of training material. It would necessitate coordination on what are the main topics, what areas should be covered, what levels training should be developed for, which institutions should be covering them and who is approving the course. Allowing NSOs and students to build up their education consisting of different pieces, possibly also achieving accredited training through combining micro-credentials from a range of courses, may be a way forward. Regional and international partners agencies can help identify comprehensive training packages that offer content for basic, intermediate, and advanced users. Dialogue and collaboration between NSOs and partners can help designing comprehensive training curricula that fit institutional needs.

A breaking point will be where all NSOs do not necessarily need their own training programme anymore but can find most trainings on-line. The NSOs can then focus on their needs, and only have to make courses where they do not already exist, and to fill country specific needs. Before we reach that point, sharing training material and catalogues among NSOs may make it easier to start building a training programme. Having access to courses that comply with international guidelines, that can be adjusted to fit national needs would make it easier to develop a training programme.

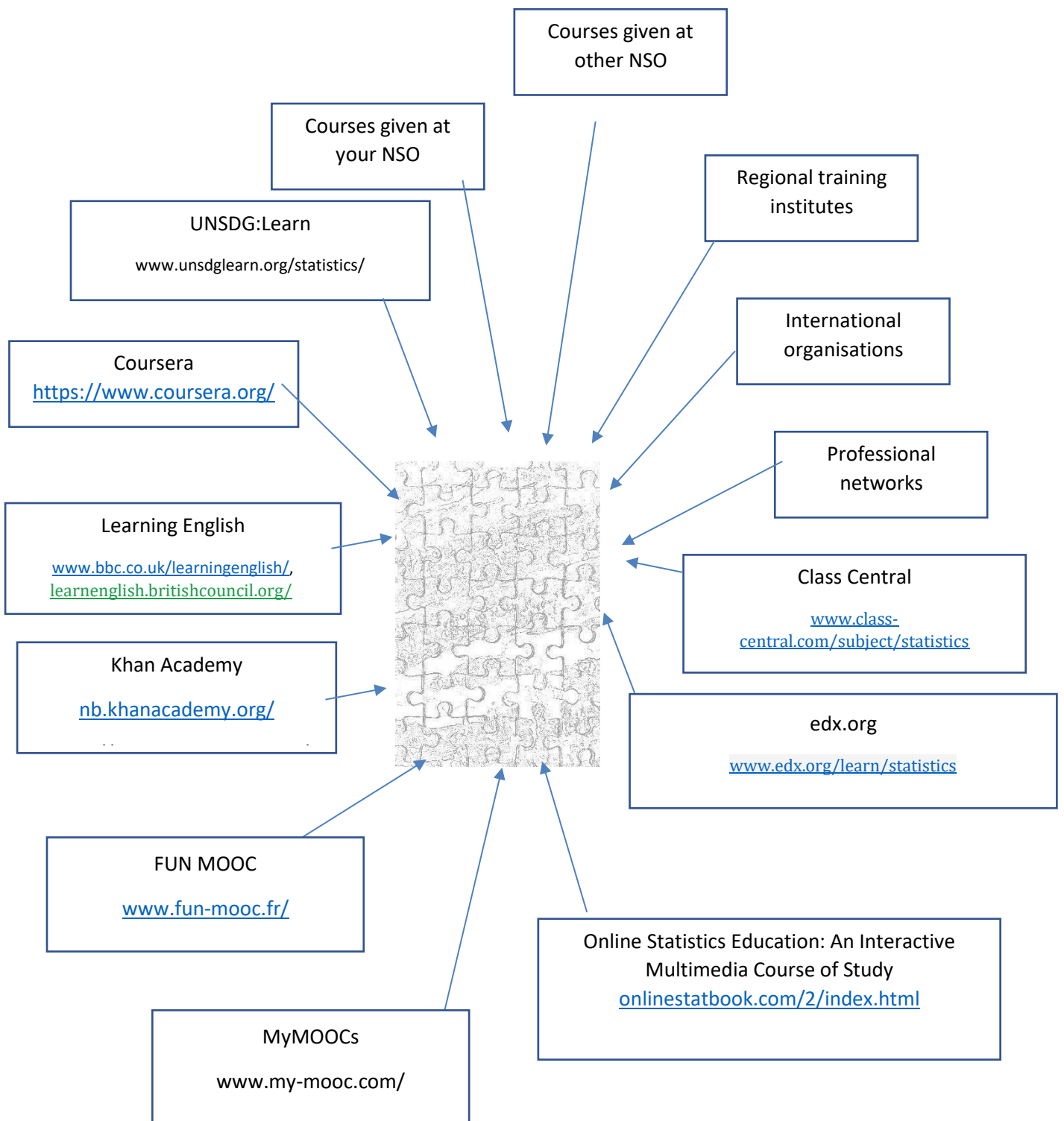
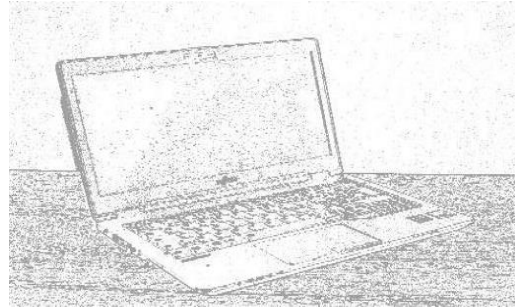


Figure: Some possible sources to identify relevant courses

Globalisation of training material increases the benefit of avoiding duplicating material. This may also be a challenge at the national level. In Brazil, before making a new course, the Brazilian Institute of Geography and Statistics (IBGE) is required by law to check if a similar training is already made, either by them or by other government training centres to avoid duplication. IBGE also uses the UNSDG:Learn-page, a national platform of courses for government employees (<https://www.escolavirtual.gov.br/>) and MOOC portals to search for existing trainings.



Building strong repositories like the UNSDG:Learn and other hubs can help NSOs fill their need for training material and have access to courses. There is still a potential for further developing hubs for sharing training material. As of now, the UNSDG:Learn is perceived as a bit too specialized, not yet covering basic topics like training of interviewers and basic calculations.

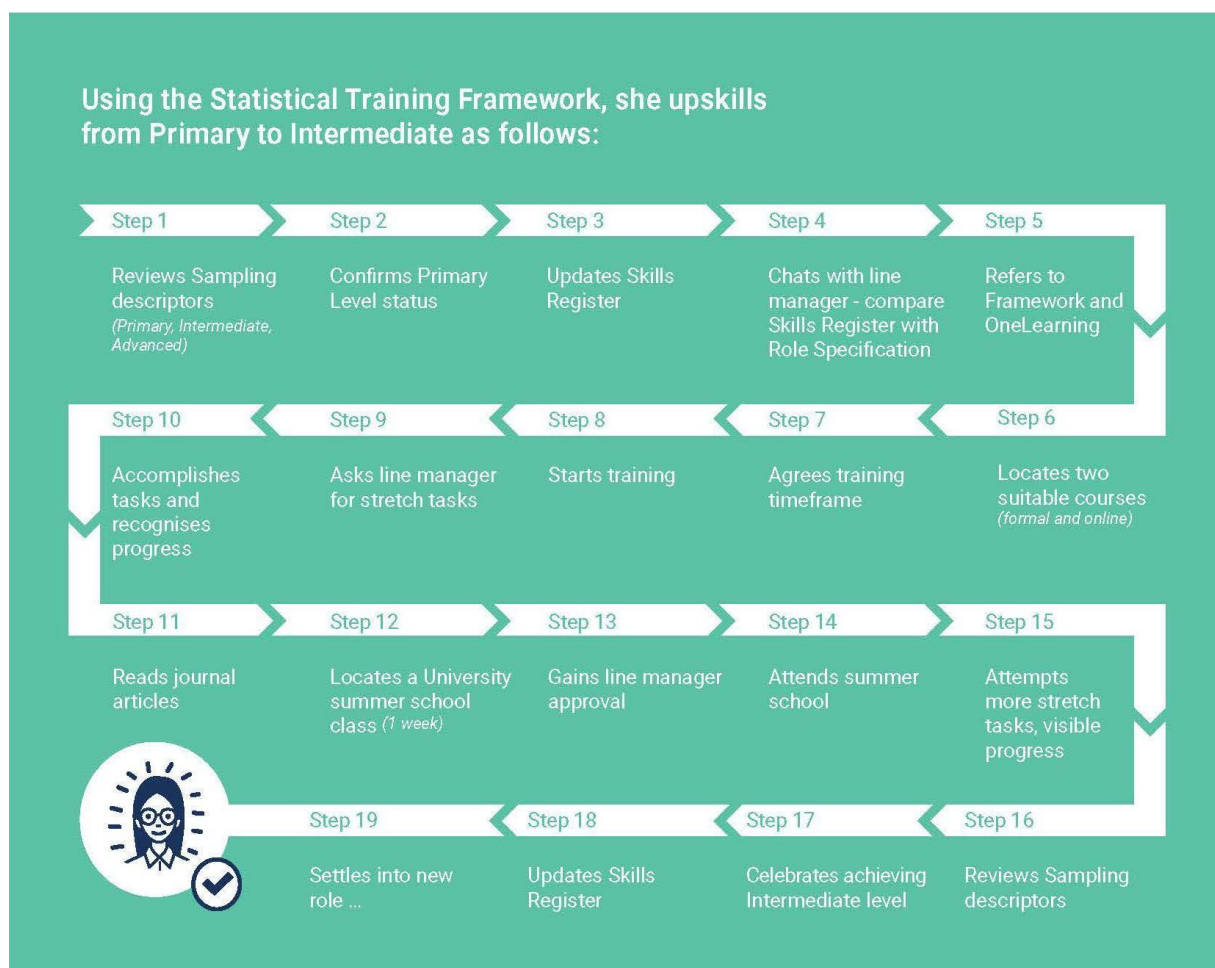
Learning paths

A learning path is the way an individual employee follows to develop his or her skills. It is based on identified gaps, and prescribes a way to fill them. In CSO Ireland training interventions are planned based on enhancing on-the-job experiences, mentoring and coaching as well as courses and reading.

Learning paths in CSO Ireland

The Central Statistics Office (CSO) of Ireland has developed a framework for statistical training aiming to align knowledge, skills and expertise for each role within the organisation based on the Generic Statistical Business Process Model (GSPBM). Thirteen different skill sets have been identified, each related to different roles at different levels.

All staff do a self-assessment of their skills under each of the thirteen skill sets, identifying their knowledge/skills and expertise. The skills are graded in five levels. The aim is that the individual staff member gets a better understanding of what skills are required in their current role and what it would take to move to another level or statistical area. They select appropriate training interventions to build their learning path in agreement with their immediate manager, helped by the training unit. Below is an example of how Mary, a CSO staff member who follows a learning path to develop her skills in sampling.



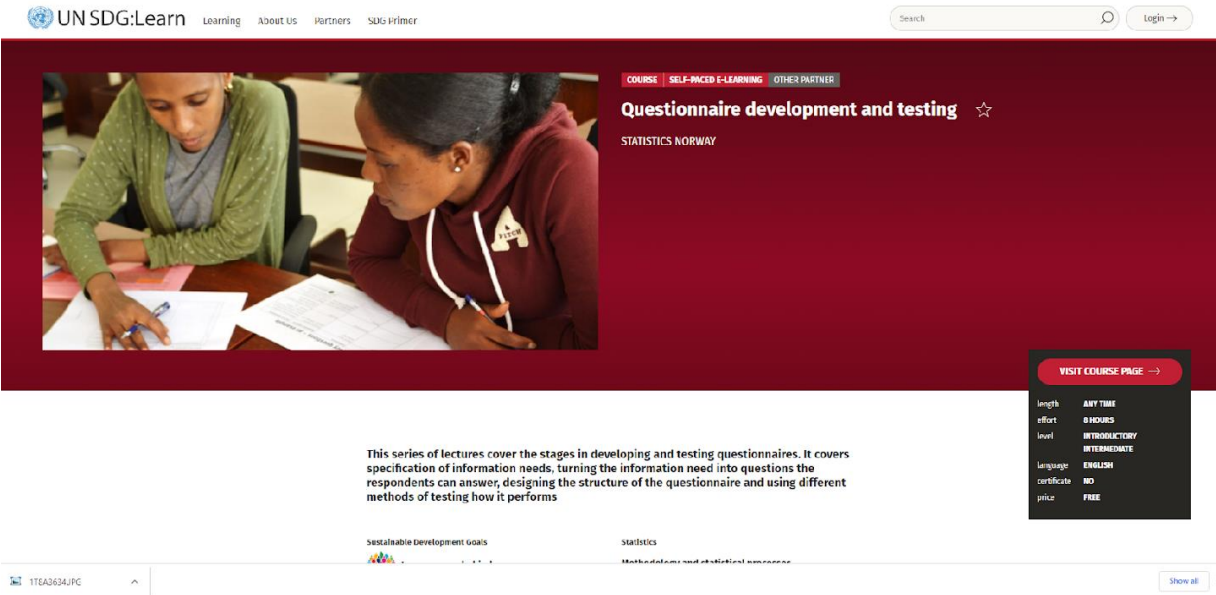
Example of how the training framework in CSO Ireland can be used

Some topics have to be the same for everyone, while others must be adapted to the individual. Some topics could be part of an induction program, like technical and administrative issues. Others could

only be given to relevant staff, like new data sources or other emerging topics. Learning pathways can take its material from a standard set of courses specifying common learning needs in NSOs. The development of learning pathways ought to be part of a human resource strategy and could also be anchored in the NSDS.

NSOs are generally not recruiting new staff in groups. New staff members come one at a time, each with their unique background and tasks to solve. They need training at different times, work in different areas and have different learning needs. Hence, they need individual learning pathways.

Even if new staff need the same training, they may not need it at the same time. NSOs need to train people periodically, either because there are newcomers or there is a need to maintain a certain level of skills in the organisation. Some e.g. have security courses they need to take on a regular basis. Sometimes there are gaps, especially on new emerging topics like data science. Logically this should be related to the priorities in the NSDS, or in other ways related to the needs and priorities of the NSO. The need for human resource development will be similar across many countries, but some may also be specific. For trainings that are not needed by many persons in each NSO, regional organisations can be providing training for several countries using economies of scale to address some of these needs.



A course in questionnaire development and testing, available at UN SDG:Learn (www.unsdglearn.org/statistics/)

Knowledge of what training exists is the map to the learning path. Online material supporting both self-paced and facilitated e-learning must be available, and preferably organised in a way that makes it possible to find and use as building blocks in a learning path. To make NSOs and potential learners aware of what trainings are upcoming both globally and regionally, developing a calendar of training events can help plan training for staff. This may be especially relevant for new staff that often have both the need and appetite to develop their skills. Having access to training resources is key to establish learning pathways and to follow them.

Training at different levels

Adapting courses to what learners already know is just as important as adapting it to what level they need to reach. Trainings are often divided into basic, intermediate and high levels.

The basic level is often associated with training for new staff. New employees do however come with a varied set of skills and are to perform different duties. Hence, although they partially can benefit from the same training, they also have diverging needs. Often the basic level training would be an introduction to statistics and relevant software. The basic level courses can provide an overview of statistics as a subject and its application within the National Statistical System (NSS). It can also give an introduction to the statistical production process; data collection, how to organise data for analysis, how to produce and present simple tables and graphs and reporting. Training for new staff also ought to include administrative routines, knowledge of the organisation, softs skills and team building.

Training at intermediate and higher levels will generally be more subject matter specific. Depending on the qualifications of the students and the complexity of the topic, a varying amount of training will be needed. Often subject specific courses are divided into intermediate and high levels, whether the subject is a statistical discipline, an IT system or programme, dissemination, administration or management. No matter how this is structured, it is important to remember what a student from Nepal told us: *If the trainer is trying to speak to too many different levels, training is often not efficient.* Some learners know more than others. What one finds easy may not be understandable to another. In response to this challenge, some NSOs have developed a more granular grading of levels. CSO Ireland has divided key skills into five different levels.

Identifying skill levels of staff at CSO Ireland

The NSO of Ireland has graded thirteen key skill sets identified. The skills of each employee is graded based on how they assess their own skills on a range of topics within each of the thirteen key skill sets.

- None - a user who has no knowledge or training in the topic
 - Introductory Level (Level 1) - a user with some knowledge of the main concepts involved in the topic but has little or no practical on the job experience
 - Foundation Level (Level 2) - a user with some theoretical and/or practical on the job experience of the topic but the knowledge is incomplete
 - Primary Level (Level 3) - a user with the essential skills for the topic
 - Intermediate Level (Level 4) - a user with the essential and desirable skills for the topic
 - Advanced Level (Level 5) - a user that is considered at expert/superior level, i.e. possessing the skills expected from a methodological expert or an individual with extensive knowledge or ability based on published research and experience, who has worked in a specific area for a number of years.
-

The Philippine Statistical Research and Training Institute (PSRTI) rarely offers very advanced training courses. They focus more on basic to intermediate. This is largely caused by the greater demand for basic statistics topics, and partially due to the lack of trainers that can simplify the presentations of the advanced topics in statistics.

NSOs report that it is difficult to get support to train staff for a master's degree, and candidates with academic degrees are often in short supply. Hence, staff without formal training are sometimes promoted to senior positions within NSOs.

We're not training our staff like we did in the 1980s and 90s, when more people got masters. Even our development partners refuse to send people for long term training. They say it is not part of their strategy. When we manage to train them using government support, at the end we find that our partners poach the few we have trained. Right now, we're not in good shape. This will harm the statistics produced tomorrow, that is the danger we're heading to.

Jameson Ndawala, Director of Demography and Social Statistics Division, NSO Malawi

As long as the differences in salary and status between working in an NSO and a regional or international organisation is large, employment in these organisations will be attractive to NSO staff. Mozambique and Malawi are among the countries where staff leave the NSO for greener pastures. Employment of NSO staff by regional and international organisations further adds to the lack of educated staff at NSOs. This challenge is enhanced by the fact that many international organisations set goals to hire national staff. Having staff educated within the relevant academic disciplines is key to produce quality statistics.

Funding and other resources for training

To have sustainable training, financial resources must be made available for training and capacity building in NSOs, preferably from domestic resources included in the budget of the organisation. Government budgets are under pressure in many countries, often accelerated by the global pandemic. This had led to increased focus on cost efficient ways of having access to skilled personnel. In Norway, the NSO was planning to introduce a new IT-platform and needed people with skills that were in short supply. Statistics Norway wanted to limit the use of external IT consultants, both to save money and to have the relevant capacity in-house. Having the relevant classroom training was expensive, at a cost of USD 1000 to 3000 per student per week. After assessing the needs of the organisation and the availability of online training, online courses available through edX were identified to satisfy the training needs. Learning groups were established for the learners to support each other. The cost of the identified training was around USD 100 per course. This made it possible to give more staff training at a significantly lower cost.

For some NSOs domestic resources must be supplemented with resource mobilisation from partners. In Malawi, donors have been pooling resources to support the two previous National Strategies for Development of Statistics (NSDS). The current NSDS does however not receive this kind of support, leaving the NSO with few resources to train their staff. Scarce funding not only makes it difficult to pay for training, but also has negative effects on capacity development in other ways. First, it has led to a ban on hiring new staff, increasing the burden on the individual staff member, making it difficult for them to set aside time to train their colleagues. Second, even if training is supplied for free by

regional training institutes or international organisations, the local costs still have to be covered by the NSO. When there is no budget for training, accommodating even modest costs for venue and travel is a challenge.

Donors can fund their own expenses, but not cover the local costs. Without that, we can not even write to ask for help. Not sure if they will give us the training we need, as we have never asked.

Hector Kankuwe, Coordinator of the National Statistical System in Malawi.

Many NSOs report lack of funding to be the main challenge they face in training staff. Some report that a turn to virtual training caused by the pandemic has helped them fill the need for training as the cost of virtual training is generally lower than the cost of classroom training.

Availability of domestic funding for training in statistics is influenced by where the statistical organisation is placed in the government structure. Independent entities may have more leeway to prioritize their resources. The further down in the hierarchy of government the statistical production is placed, the less budget. In Malawi, statistics is produced in statistics units in Ministries part of the NSS. The statistics units are organized as sub-units under the Planning Directorate in the ministries, often playing the second fiddle. If the Planning Directorate has a budget that can be used for training, little trickle down to the statistics unit. The Philippine Statistical Research and Training Institute (PSRTI) reported that their number of training participants declined from 2015-2017, with 2016 being the period where international participants (that bring in their own funding) no longer came. The reduction of national budget for capacity building contributed generally to the dearth of training participants.

Many international and regional organisations have less access to funding for training, due to emergencies caused by the pandemic. This in turn gives them fewer resources to help NSOs build their capacity. Several low capacity countries experience donors are rechanneling resources away from statistics because of the pandemic.

It is also necessary to ensure that the appropriate expertise and resources exist in-house or can be recruited from outside. The necessary resources will have to be dedicated to the training programme. These include management time, experienced trainers, the administrative effort, training or course materials, computers and a room to do the training, and maybe also travelling, accommodation and refreshments. Training will also require resources and may require employees to be away from their posts while they learn.

Organisational setup and tasks

A NSO training programme can be organised in several ways. Often managing a training programme is done by a dedicated unit within the NSO or handled by dedicated staff within a supporting section, for example in a department for administration or human resources.

It can be an advantage to have technical staff involved in running the training programme to understand and accommodate the need of technical staff when a programme is developed. The responsibilities and task of the training programme could be:

1. Identify training needs. This could relate both to NSO's and the individual employee's needs,
2. Prioritise the training needs and develop a training plan,
3. Identify the right person or institution to conduct the training,

4. Inform employees of training possibilities well ahead of time,
5. Develop routines for selecting participants for obligatory training,
6. Develop routines for applying to voluntary training, as well as routines for selecting among the applicants,
7. Organise the training,
8. Evaluate training in order to improve it before it is conducted again.

Giving the staff insight in practical approaches to solve tasks is often best done by having them attend relatively short courses related to their tasks. The knowledge needed is often based on sharing experiences on practical production of statistics and working routines.

Training programmes can do training both in the Headquarters and in regional offices of NSOs. Hence, portable equipment may be an advantage. In a development phase, the main priority of a training programme should be to give internal training. Gradually it may take on other tasks like supplying training for other institutions and library services. A training centre may also contribute additional income to the NSO, through offering training and potentially other services to other government institutions or organisations.

Many NSOs do not have a training programme that is able to define needs and trainings based on a defined list of courses. Training must be adapted to fit the different needs in the organisation regarding both the topic and level of training. Regional training centres and international organisations can take the role to help NSOs build training programmes.

Extending training programmes to the National Statistical System (NSS)

Many NSOs have the mandate to build the capacity of the NSS. This can be done in various ways. In Malawi, the Statistical Common Service sends staff from NSO to work in statistical units in Ministries, Departments and Agencies that are part of the NSS. In Senegal, Agence nationale de la Statistique et de la Démographie (ANSD) tried to establish a similar system to face the challenge that ministries producing statistics often do not have the skilled staff and capacity needed. The plan was to place ANSD staff in all ministries to enhance the quality, but the implementation did not succeed. One challenge is that salaries of people working in ministries is much lower than in ANSD, and that it is difficult to raise salaries in the ministries. As a second solution ANSD is aiming to train staff in ministries producing statistics, through offering them short term courses. Training for NSS in Senegal is however dependent on external funding, something that limits the number of courses given.

The NSOs of Brazil, Ukraine, Myanmar and Mozambique also give training courses to NSS. Providing training to NSS often greatly expands the number of people to be trained. In addition, the statistical capacity and skills in NSS is sometimes limited, something that further adds to the challenge of training NSS staff. Finally, operability of systems may be a challenge. Many NSS members use different production processes, classifications and IT-systems than used in the NSO. This may be a hindrance both for cooperation on capacity development and interoperability of data and statistics. In aiming to overcome such challenges, joint capacity development may be a step on the way.

4. Enhancing motivation to train and be trained

What excites you to train and learn?

It is imperative to make people *want* to learn and train to develop the capacity of an organisation. The staff must be motivated and feel responsible for the product, to see a purpose in learning how to develop it further. Hence, successful training does not only depend on the training itself, but also on the management, the organisational structure and external factors influencing the NSO. No matter what challenges an NSO is facing, our first and maybe most important aim is to make staff want to learn and make it possible for them to do so. Our aim is to build a culture where people want to engage in training others. If we manage to really excite their minds, a foundation for developing capacity exists. In Nepal the Central Bureau of Statistics reports that courses using modern training techniques and have a good training environment are attractive and perceived as interesting both by trainers and learners.

Adults often want training that is directly relevant for the task they are going to solve. Hence, training aimed at solving a task or a problem often motivates participants and will often be put to use after the training has ended. If people need a training to do their job and it is possible to apply what they learn, they will often want to take part in training even if it requires an effort. If training is linked to performance needs, learners will often find a natural motivation. On the other hand, staff can be demotivated if managers do not support them to perform based on what they have learned. If learners can practice what they have learned when they come back to work and perform better based on what they learn, training is going to be natural and no special incentives are needed.

The design of a course influences the excitement of the learners. This includes how the content is structured, learning material, classroom, interaction and activities like e.g. field-work. Varied learning methods also tend to arouse the interest of the learner, and using a mix of e-learning, classroom training, hands-on problem solving, and assignments may be beneficial. The trainer needs to be someone who knows how to deliver, can articulate the key issues and bring out the best in the students. From the perspective of regional training centres, working closely with few engaged colleagues in an NSO, prepared to take the training on works the best.

Creating excitement and intrinsic motivation will often be more efficient for successful training than external motivators like financial incentives and travels. Focusing on internal motivators will make it easier to recruit learners that participate in order to learn, not to receive external motivators like money.

Willingness to share knowledge

There is a saying that “knowledge is power”, meaning that knowledge is associated with strength, something you can use to gain something else or to control others or events. Fearing that others will be more powerful than you if you share your knowledge with them, is a reason to keep what you know to yourself. Giving away your knowledge may not only make you less powerful, it may also lead to that there is no longer any need for you in the organisation. This is an incentive to carefully control who gets access to training and who you share your knowledge with. Several NSOs report that such beliefs and behaviours - or cultures - hinders knowledge sharing in the organisation.

The belief that giving away knowledge may weaken your position or make you redundant are generally rooted either in the organisation or the society at large. If staff members have seen colleagues weaken their position as a result of sharing knowledge, they are less inclined to do so themselves. To change this, staff must be convinced that sharing knowledge is more likely to

strengthen than to weaken their position in the organisation. The potential loss of the individual may be higher in organisations with steep hierarchies and large power-distance.

In societies where the risk of losing ground at work can be devastating, people will be less willing to risk it. This can be the case if job security is low, there are limited opportunities for alternative employment, limited social security support or the society is highly competitive. If so, changing cultural habits against sharing knowledge will be a more challenging task.

Many do not want to take on the extra burden it represents to train others or to learn something new. A proactive attitude towards change and growth has to be built step by step. If people see others grow in the organisation, they may want to follow.

Many people do not want to change, as changing unfortunately is painful. You have to find three or four enthusiastic people that will support you. Then you try to start a chain reaction, going to others step by step. But you have to show examples and promote the new ideas every day. It takes a lot of work to introduce something new.

Vadym Pishcheyko, advisor to the Head of the State Statistics Service of Ukraine

Government employees may in some cases be more risk-averse than others. In combination with an aging staff, it is reported that this can create an environment where it is difficult to induce change. Unravelling the social structures that hinder learning in each specific organisation can be a first step towards changing them, to create an environment or atmosphere more favourable towards training and learning.

Visibility and recognition

If you want to bring out the best in people, you ought to give them credit for their achievements. We should give recognition for what we want people to do more of, the behaviour we want them to continue, like training and learning.

Trainers need to be empowered in their role as trainers. This means that they need training themselves, to be confident in their role. It may be necessary to give trainers training in quality programmes, either national, regional or international. Training of trainer programmes may also be an additional motivation. These programmes can also be designed with follow-up sessions, to constitute training as one of their responsibilities, to have professional support and the possibility to exchange experiences with peers that also teach, including colleagues from other countries. Regional organisations could have this role, to bring trainers together across borders. This could be organised the same way as a leadership programme, only focusing on trainers and how they perform their role.

Being a trainer, you gain new insight and develop yourself. The role gives visibility and allows them to cooperate with and learn from colleagues. By being involved in training you increase your own network and promote yourself internally. There is a potential to go as guest lecturer to local training institutions, on topics of general interest. NSOs are often considered to be the "university" that feeds talent to the rest of the national statistical system and being part of that may give visibility and professional recognition. In a more virtual modality, the trainers can expand their work to other countries and strengthen their participation in an international community easier than before. If you teach an international course you also get more visibility, something that can be motivating even though you may not receive higher pay.

Many find it motivating to meet international colleagues and develop trainings together. It is often useful that colleagues question the way you work, to get an outsider's perspective. This can also help

creating or strengthening networks among colleagues working in the same field. Further, it is also good to develop courses with colleagues you normally work with, as it makes people learn to know each other better.

Dedicated students can be given the privilege of participating in further training they are interested in or that can benefit their work. Increasing the possibility of having further training can be used as a motivator to attend courses.

When you are with your colleagues and suddenly you become the teacher, it is not the same as if you become the teacher of students you don't know. Often it may be more difficult to be the teacher of your colleagues. Sometimes it is more attractive to go to teach in another organisation or country, even if there is no economic compensation.

Training creates networks. The trainings arranged by the European Statistical Training Programme (ESTP) brings together students working on related topics in NSOs from all over the EU/EFTA region, also including participants from other countries, depending on availability. In the Central Statistics Office of Ireland, all participants are required to pass on the training they receive at ESTP-courses to their colleagues, something that gives them further visibility. The training programme often also bring together trainers from different countries, fostering exchange of ideas and training material.

Most NSOs want to be part of the international statistical community. Taking part in training activities does not only give visibility to the individual but also to the organisation, potentially strengthening networks and the status of the NSO.

Being a priority of the management often leads to visibility and recognition. If training is a management priority, this may enhance the status of the individual trainer in particular, but may also reflect positively on the training participants. When the leadership in an NSO is convinced of the importance of training and encouraging staff to take part in training, staff will generally participate. Priorities of the management also influence the status of a training programme within an NSO, the perspectives on having internal training resources and the programme's potential to achieve its goals.

Economic incentives

Giving extra economic reward for training is not only a matter of having these funds available. Unfortunately, paying people extra for giving training may divert them from their other activities that are considered to be main,

and may lead them into constant search for finding these opportunities, advocating for these openings to deliver courses even when there is no need for them. Hence, paying extra may create perverted ethics on the incentives of the person. This is particularly the case when the extra pay is a considerable part of a government salary.



Incentives to train at the Central Statistical Office of Grenada

Currently all courses are remote, but the number of courses offered have increased significantly and it is possible for the CSO to train more people now than before the pandemic. Earlier staff received daily allowance when going away for training, but this is not the case with remote training. Even though the daily allowance is an extra incentive to go for training, staff still wants to attend courses without reviving it.

Taking part in training may prevent participants from doing other activities associated with extra pay, like taking part in field work. This can give an economic incentive not to take part in training.

In many situations training participants are paid an economic incentive to take part in trainings given by international organisations, so-called sitting-fees. UN organisations generally in principle agree they should not give sitting-fees and see it as possible to reverse this practice. The position of UN country teams on the ground is that they do not provide fees for participating in training events organised by the UN. Even if sitting-fees are not paid, if the training happens outside the ordinary place of work, a daily allowance is often paid, something that may represent a significant part of the income of the participants. Even though it may be challenging, leadership at the NSO level could be promoting a culture of learning and encourage people to develop their skills, through incentivizing participation in training without economic means. Having training at the ordinary place of work and integrating it as a task expected of the employee, may facilitate this process.

Training as a career path

Training can be linked to career development. Even though a direct link between training and promotions is rare, other measures can be taken to establish training as a way to build a career. Pre-service training can be a prerequisite for being hired, and further training can be set as a necessity for keeping the job or being promoted. Several NSOs require staff members to have exams regularly and give training on the relevant topics. The benefit of getting involved in what is outside your day-to-day role and new topics may also be an advantage in an interview for promotion.

Those who get certificates work hard and want to keep on training. They get committed to the NSO, and raise up the ladder and get even more committed. It makes it difficult for them to leave. They compare to their colleagues without training, who remain in the same position. After training many may start looking for greener pastures, but the NSO can become their greener pasture. They get salary increase, authority, and become managers. This makes them think they are better off.

Jameson Ndawala, Director of Demography and Social Statistics Division, NSO Malawi

Training can also be made an integrated part of job descriptions and annual performance evaluations. Linking identified needs in an organisation to a performance evaluation process, may motivate staff to take training. Even though there is no clear link between training and promotion, a stronger competence base will increase your chances of being promoted. Promotion is not only a financial reward, but also a sign of recognition.



If people are led to believe that if they develop their capacity, they will climb the ladder, it is a problem if it is not true. If at the end of the day all they get out of training is a diploma on the wall, without recognition, new challenging tasks or an idea of a career path, staff may be discouraged.

Some training units are approached by senior management requesting to identify people with certain skill-sets. A training unit can e.g. help provide management with qualified personnel when establishing projects. This can help making persons trained visible and make them use their training.

It is sometimes said that if you train someone they leave. The challenge of a manager is that if you do not train, chances are staff will be discontent and not perform optimally.

Certificates and accreditation

Offering certificates or diplomas makes it possible for learners to document the training they have attended. This can be motivating, as it adds to their profiles and their CVs, also if they leave the NSO.

Training is sometimes ad hoc in nature, not considering the needs and goals of the NSO.

Accreditation systems may motivate more structured training, organising it in a way that can help build certain skill sets longer term. Building accredited trainings based on having a set of courses may help structuring learning pathways. Learners can e.g. earn micro-credentials from taking a course, adding up to formally accredited training after having taken a set of courses.

Having internationally recognised courses with accredited qualifications may be motivating to both students and trainers. Various modules can e.g. be put together to form a post-graduate degree. A requirement to get the degree, could be to teach X number of modules. An international recognized post-graduate degree could give recognition to trainers in NSOs, as well as being a career path. This can be done by establishing a set of training elements addressing parts of a whole, qualifying for a diploma when all the parts of a package are completed. A training diploma can be issued to trainees that successfully complete the number of courses that are elements of a whole, e.g. on labour statistics. The goal to attain a diploma can motivate candidates to take several courses. Training packages ought to be aligned with national developments strategies and the goals of the NSO.

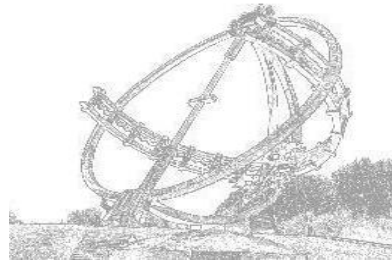
A possible role of certification of courses can be to combine individual courses to a more comprehensive training. Recognition for having a certification in performance evaluations can create a pull for a course structure instead of individual trainings. A structured and recommended set of courses can be established and taught in regular intervals. This may make it more predictable for NSOs what courses are going to be available to them in the time to come.

Establishing a comprehensive system of accreditation as outlined above does however require extensive cooperation between NSOs and international and regional organisations. Existing forms of accreditation may however be integrated as part of such a system, e.g. if certificates are automatically generated at the successful completion of an e-learning source.

Time for training and learning

Both trainers and learners need to set aside time for training. Integrating the task as part of the ordinary tasks of the employees may facilitate this process. If giving and attending training is something that has to be done in addition to other tasks, it may not receive the attention needed.

Developing training may take a substantial amount of time, and sometimes it comes like an additional responsibility, which may be a problem. It should be clear when a person is requested to be involved in developing trainings and teaching. It should preferably be part of his or her job description or ToR, and other work should be proportionally removed.



In the past NSO used to have a statistical training school, it was a good mechanism, but now it is discontinued. There were some challenges, but it was a good mechanism for those who wanted to do more statistical training. I think it stopped because the lectures were also involved with NSO core activities. They had to do the core functions, so they did not have time to train. But the idea itself was good.

Hector Kankuwe, Coordinator of the National Statistical System in Malawi

It may be useful to concentrate courses to a time that is normally relatively quiet, e.g. when there are few major surveys or other major tasks ongoing. If such a period, at e.g. two months can be identified, it will make it easier for the staff to set aside time for training, without conflicting with other tasks of the NSO. It is also important for the management to allow employees to spend time for training.

Even though developing and giving training is generally considered to take more time than participating in courses, participants also need time to take part in lectures, review training material and do assignments. Given that the number of participants is generally higher than the number of trainers, the number of working hours spent by participants will usually be higher. These hours need to be set aside or otherwise compensated. We find an example of compensation of time spent in IBGE, the NSO of Brazil, where staff had to take a three-hour e-learning course in IT safety. The learners had three hours added to their flexitime account to take the training.

5. Encouraging diversity in training

Motivation and opportunity to take part in training will influence the composition of participants. In the previous chapter we have looked at structures that influence people's motivation to participate in training. Even though taking part in training is partially an individual choice, it is influenced by social and organisational structures. Gender, ethnicity, nationality, social class and age are among the characteristics influencing what we see and what we learn. Hence, having diversity among trainers and learners is considered to be an advantage. In the following, we will look at ways to balance participation. The aim is to build skills where they are most needed and select participants in a way that is perceived as fair, not to create unrest in the organisation.

Selecting participants using a framework

A framework that structures who gets access to training based on identified needs and anticipated benefit of the training can reduce imbalances in access to training based on e.g. gender and age. It may also reduce the challenge of participation based on extrinsic motivators like sitting-fees, daily allowance or a wish to go abroad. The framework can be based on a set of skills desirable for an NSO (competency framework), linked to a performance management system, focusing on the current tasks, skills and aspirations of the individual employee.

Developing and announcing a training calendar can make all staff aware of a training. That can give everyone a fair chance of showing interest to participate in courses and have time to plan how to organise work in a way that allows time for training.

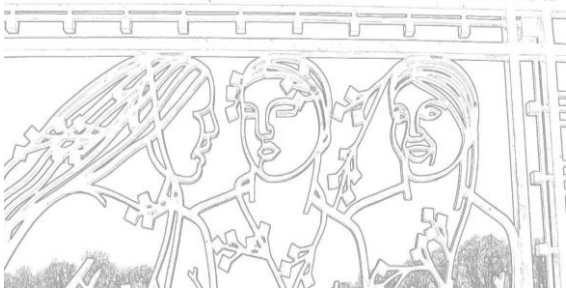
Selecting participants to attend training ought to be based on their training history, position and duties at the NSO. The staffing process at the NSO ought to be competitive, fair, transparent and based on merit and credentials. The individual staff member can identify training plans jointly with his or her manager, using the plans in selecting participants for courses.

Gender balance

It is often considered an advantage to ensure equal opportunity to participate in training for both women and men. This is particularly relevant in settings where access to training is limited and associated with economic benefits, and the major part of training participants are male senior staff.

If it is possible to have an equal number of women and men participating in the trainings, will partially depend on the gender composition of staff members in need of training. Having female managers may also promote equal access to training IBGE in Brazil has experienced a recent increase in the number of female managers, and do not report inequalities in access to training. Recruitment to training generally happens regardless of gender.

Women more often than men have the responsibility for looking after children and other family members. Hence, traveling for training or having training outside of normal working hours may make it challenging for women to participate, and giving training within working hours at the place of work will facilitate female participation. For some, it is also culturally undesirable for a woman to travel for training alone. Several regional and international organisations have noted that the recent shift to on-line training has increased female participation.



Having a gender inclusive environment is also important to have female participation in training. This would e.g. include having a safe place to sleep and proper toilet facilities. This may in particular be a challenge related to field work training.

Having female trainers is often considered to increase female participation. The same is the case for having quotas of male and female participants and establishing internal policies to avoid discrimination.

In some NSOs the question of gender is not all that relevant. In State Statistics Service (SSSU), the NSO of Ukraine, 93% of staff are women, and this is reflected in training participation. The high rate of women working in SSSU and many other NSOs may be related to the fact that salaries in NSOs often are low, and that women more often than men take employment in sectors with low salaries.

National and international partners are working together to ensure equal access and participation in capacity building programs among males and females. In some cases, priorities may however be influenced by political priorities, power or availability of economic incentives associated with training. Further, NSOs will generally aim to train all staff members that need training, regardless of gender. Gender imbalances are often a result of the recruitment process. Regional training centres and other international partners may have targets on gender representation, usually to secure female participation in trainings. This sometimes represents a challenge selecting participants for training and should be discussed at an early stage in the process of planning a training.

Ethnic and social diversity

In many countries it is an advantage for career opportunities and career advancement to belong to a certain ethnic or social group. This can both influence the probability of being hired by an NSO and the opportunities a staff member is given within the organisation.

Lack of diversity can result both in selecting a particular group to participate in training and capacity development or leaving staff with a certain background with few possibilities of being selected. The former can be the case if only members of a dominant tribe both are in the NSO management and systematically select members from their own tribe to take part in training. The latter is when certain ethnic and social groups are facing difficulties getting employment and being prioritized for training and capacity development. We find an example of trying to counter this in measures established by the Norwegian government to encourage government institutions hiring applicants with a migrant background.

Pre-training assessment

A pre-training assessment can help getting the right mix of students. If the assessment of potential candidates show that one group is underrepresented, it is possible to encourage more participation from the underrepresented group. This should happen in the planning of the training, well ahead of the first day of training.

A needs assessment can be a way to annually gauge the interest of staff on what topics are considered relevant. It can be used when deciding what courses to conduct. Needs assessments can also focus on one specific training. If you e.g. are developing a new course on data science, a needs

assessment could find what is the best way to develop the course and what skills you need to emphasise based on the skills and needs of the participants.

Making a pre-training, e.g. by using MOOCS, can bring everyone to a similar level before the training and also in itself sustainably contribute to learning. A pre-training can also give participants a taste of what the training is about, to find if it is suitable, relevant and interesting to them. Finally, it can be used to prioritize participants that are assumed to benefit most from a training.

Supply of training

When the supply of training is not limited or larger than the demand, the challenge of having balanced participation is reduced. A shift to electronically supported learning increases the availability of training. How much training is done will however be influenced by the need for developing skills, the interest of staff and how much work time the organisation prioritizes to allocate to training.

Limited internet access hinders staff in many NSOs from using online training. This can be particularly challenging for younger staff, a group that will often benefit most from online training. The challenge of having limited access to the internet may be further strengthened by an unstable supply of electrical power.

In Nepal, trainings planned at the CBS must be approved by a higher authority, and some are not approved due to budget limitations. Junior staff often have to wait several years to get the required training as senior staff have priority to access the training.

People often do e-learning on their own, leaving the organisation little room to influence what kind of training is prioritized. If the aim of the training is e.g. to prepare a shift to a new technological platform, the NSO could benefit from deciding what tools and trainings should be in focus. In Statistics Norway, the in-house training unit has made specific trainings in basic programming, analysis, data management and Python available to staff through edX to support the introduction of a new IT platform. 19 staff members do the courses, and they are divided into 3 learning groups to do assignments and discuss how new skills can be implemented in their work. The cost of the training is a small fraction of classroom courses previously used.

Supplying staff with sufficient web-connectivity, as well as time and opportunity will enable people to access training. If these needs are not satisfied, staff will not make use of online training. Making training available on multiple platforms will not only make it more accessible to women but may also increase availability for young staff and people living in rural areas. If courses also are available in an audio format it would further increase accessibility of training.

Identifying needs

An analysis of training needs will identify gaps between the skills the organisation needs and the skills the employees already have. It involves gathering information to identify areas where the employees could improve their performance. Further it is important to define the kind of knowledge to look for when taking on new employees. An analysis of training needs can form the basis for developing a training programme.

Identifying the needs of an NSO is the first step on the way to eliminating gaps in knowledge. This can be done in multiple ways, with varying levels of complexity. A simple form of assessing needs can be by asking managers or staff what kind of training is needed, relating it to tasks to be done. In Ukraine, the SSSU staff members have an annual meeting with their managers aligning tasks and

training needs for the year to come. The needs are aggregated by the HR-department, aiming to fill them. More complex methods compare a predefined skillset to the skills staff members currently have. The predefined skills can e.g. be a standard set of courses or a competency framework, specifying skills needed in different areas and parts of the production process. The CSO of Ireland has identified thirteen key skills essential for statistical production. Each staff member assesses their own skills related to the thirteen skills. The identified skills are planned to be updated regularly, e.g. every third year. Such systemic needs assessments are considered best practice.

The thirteen key skills of CSO Ireland

Thirteen skill sets identified as key for statistical production in Ireland. The classification is based on GSBPM. Each employee assesses their skills in the following thirteen areas:

- 1. Register Management
- 2. Sample and Estimation
- 3. Survey and Questionnaire Design
- 4. Imputation and non-response
- 5. Statistical Data Editing
- 6. Evaluating user statistical needs
- 7. Index Numbers
- 8. Regression
- 9. Time Series Analysis and Seasonal Adjustment
- 10. Statistical Disclosure control
- 11. Visualisation and Presentation of Data
- 12. Data Matching, Integration and Administrative Data
- 13. National Accounts

Needs are aggregated by the training unit before prioritizing what training to initiate. Development of soft skills is also supplied in CSO Ireland, through a competency framework for every level of the organization.

This approach is however resource intensive and is not realistic to implement in many NSOs. Hence, simpler ways of identifying needs must often be considered. Even though having a comprehensive overview of training needs will make it possible to prioritize among them, some needs may be evident, and identifying *one* needed training that is possible to conduct, may be a place to start. No matter what way skills are identified, knowing what training is needed is key to develop a training programme.

Identifying training needs at the Central Statistical Office of Grenada

The CSO of Grenada is a small office, with just over 40 staff members and a lot of competition for training. Normally a person from the relevant statistical area that will benefit most from the training will attend it. The Director decides who can attend training based on what staff members tasks and if he thinks they will be able to absorb the knowledge. He identifies areas where training is needed based on deficiencies on the statistical output.

Training should be relevant for the tasks of the individual employees. This will make it possible for them to utilize the training to improve their work performance.

Where a unit organising training exists, it may be useful to have technical staff in the unit. They are often aware of the needs in the statistical production and can ensure good targeting of training.

Training can help NSOs achieve their strategic goals, often specified in the National Strategy for Development of Statistics (NSDS). Finally, needs assessments should be done on a regular basis, as needs and priorities may change over time.

6. Recommendations

Piecing together the puzzle

International organisations and regional training institutes can make a standard set of courses, quality training material and other tools available to NSOs, but it is still the responsibility of the individual NSO to identify their needs and what areas they prioritize to build capacity. Commitment among the NSO top management is needed to ensure sufficient priority for training, both in terms of human and financial resources. NSOs need to develop their own training programme, based on needs and priorities set out in e.g. National Strategies for Development of Statistics (NSDS).

Establishing and further developing a standard set of courses for NSOs

A recommended standard set of courses for NSOs ought to be established, taking into account the need to have training for staff at different levels, including both time of service and level of expertise. Soft skills should be included as a natural part of the NSO standard set of courses. The set of courses ought to be periodically reviewed and updated.

Enhanced cooperation on development of courses

Coordination among international partners on what training they provide is considered important. Lack of coordination makes it difficult for NSOs that rely heavily on training from outside to get all the courses they need. Today, training is available on many topics, but no comprehensive and authoritative compilation of courses exists. Training is often available on topics an international organisation has a dedicated responsibility. Hence, many courses are aimed at supporting data collection and analysis related to the SDGs. Fewer courses are available on general other topics relevant to the statistical production process. As an example, no courses on interviewer training or field work are available through the hub for statistical training at UN SDG:Learn (www.unsdglearn.org/statistics/). Many NSOs are requesting material that can give them practical solutions related to the production of statistics.

Coordination can happen in various ways. One coordination modality could be to allocate responsibility for different areas to different NSOs, regional training centres and international organisations, perhaps in line with the way the custodian agencies are dedicated to support the various SDG indicators. The Global Network of Institutions for Statistical Training (GIST) has a mandate to help optimize and harmonize the training offerings of various institutions in the domain of statistics, and to maximize their outreach and ensure they are delivered in an efficient and cost-effective manner, and may be in a good position to solicit enhanced coordination of development of training material for NSOs.

As development of capacity for producing statistics is to some extent hindered by lack of relevant training, an international network like GIST could have the ambition to supply NSOs with sufficient training. Even though this is a challenging quest, the current move to a virtual reality has made it possible.

Identifying gaps filling them through e-learning

A number NSOs are starting to use e-learning as a cost-efficient way of building capacity. The way they use e-learning vary; some just make trainings freely available to staff, while others identify specific needs and quality courses, establishing a framework surrounding the training. However, several NSOs with few resources hardly use e-learning at all. Successful ways of utilizing e-learning to build statistical capacity could be described, and their benefits and challenges verified with resource-

constrained NSOs. Exchange of ideas and experiences between NSOs is also valuable to start using e-learning to build capacity in a cost-efficient manner.

Training material on soft skills and dedicated training for new staff

Regional training institutes and international organisations have their specific mandates, and hence provide support and courses within specific areas. Even though a few of them offer training in soft skills, this is not the primary focus of the mentioned organisations. Hence, from the NSO perspective, the offering of training in soft skills is limited. Training for new staff is rarely offered by regional and international organisations. Even though such training will often need a degree of adaptation to each NSO, there are still generic elements to it. Consequently, NSOs can benefit from training for new staff offered from regional and international organisations.

Sharing training and training material

New technology has facilitated exchange of training material and communication across borders and continents. This opens new perspectives on how training can be conducted. Not all courses need to be developed locally and conducted in a classroom. Even though face to face training has many advantages, we should further strengthen initiatives aiming to share training material and enhance distance learning.

ANNEX 1: Considerations for Standardizing a Training Curriculum for NSOs

As specified under Background at the beginning of this report, one workshop was conducted to brainstorm on what type of training courses would be helpful related to sustainable statistical training. This annex provides an overview of key elements that were discussed.

The purpose of this annex is to provide recommendations for standard curriculum topics at NSOs. resulting from the workshop discussions. The recommendations are grouped into four sections: 1) recommendations for hard/statistical skills to be included in the curriculum, 2) recommendation for soft skills that are essential to an NSO training curriculum, 3) curriculum recommendations by career stage of NSO staff, and 4) recommendations for the role of regional and international organizations in helping NSO's develop a curriculum.

In presenting these recommendations it must be acknowledged that some variation in training programmes will be inevitable, given differences in resources, level of statistical development and country context. Nonetheless, some commonality will certainly be expected.

Essential hard/statistical skills that should be included in the set of courses for every NSO

Discussions in the workshop highlighted the wide range of skills that need to be included in an NSO training program. The NSO does not necessarily need to develop courses for each of the topics listed below but may be able to find many courses on international websites such as UN SDG: Learn⁵. The task of the NSO is to have a list of available courses for employees and work with international organizations or internally to fill the remaining gaps or adapt courses to local context as needed.

The following two aspects should be included in a standard set of training courses. Topics written in bold text are suggested to be conducted within the first year of service.

1. Courses that highlight fundamental aspects of international official statistics and at the NSO, such as:
 - **The role of the NSO as the leader and organizer of the National Statistical System (NSS) as well as the organization of the NSS**
 - **Legal framework for statistics**
 - **The National Statistical Plan and the Code of Good Practices**
 - **The culture, vision, organization, policy agenda, and communication style of the NSO.**
 - **Any frameworks chosen by the NSO, such as the Generic Statistical Business Process Model (GSBPM), the Generic Activity model for Statistical Organizations (GAMSO), Data Quality Assessment Framework (DQAF)**
 - **Data confidentiality, ethics and code of practice**
 - **Introduction to UN fundamental principles of statistics.**
2. Courses that focus on statistical skills. These can be divided into two main types:

⁵ <https://www.unsdglearn.org/>

- Cross cutting courses which should be taken by all statisticians regardless of area of focus:
 - **Fundamental principles of official statistics**
 - **Fundamentals of censuses, surveys and sampling**
 - **Basic statistical analysis techniques, including disaggregation by age and sex**
 - **Introduction to the Sustainable Development Goals indicators**
- Courses specific to the area of specialization:
 - Census and survey planning and management
 - **Classifications, international standards and nomenclatures specific to the specialization area of the employee.**
 - **Fundamental documentation, methodological documents and reference materials specific to the specialization area of the employee.**
 - Geographic information systems software such as ArcGIS
 - Sampling: Sampling and estimation, imputation, probability, weighting, etc.
 - Questionnaire content and design
 - Field operations including how to write an enumerator manual, training of trainers, questionnaire control systems, etc.
 - Data Processing and analysis:
 - Software programs such as R, SAS, STATA, SPSS, CPro or Survey Solutions
 - Data exchange systems such as SDMX
 - Analysis techniques such as linear modelling,
 - New data sources, use of administrative registers and their links to existing data.
 - Data dissemination:
 - How to write a report,
 - Data visualization and purpose of visualizations
 - Data literacy for data users and the press

Participants highlighted that courses should be developed with specified outcomes that are linked to job objectives where this is feasible. In fact, it would be ideal if the job tasks are defined first, and then the courses are designed to help staff accomplish those tasks.

Essential soft skills that should be included in the set of courses for every NSO

Participants in the workshop agreed that a standard set of training courses at an NSO should include not only hard skills, but also soft skills or professional development skills. One of the positives of developing such skills is that many are cross-cutting and can be applied to multiple areas within an organization. The soft skills that participants felt important to include in an NSO set of courses are as follows:

- Clear and effective communication
- Teamwork
- Pedagogical training
- Stakeholder coordination and partnership

- Fundraising
- Understanding customer needs
- Leadership and mentorship
- Management and supervisory skills
- Change management
- Project management
- Critical thinking, problem solving, how to develop curiosity
- Written communication and telling the story
- Simple and effective data presentation
- Negotiating skills
- Diversity
- Organizing effective meetings and time management
- Social media usage
- Language skills, if applicable.

There are organizations that already have comprehensive soft skills training, such as the program on professional skills for official statisticians at SESRIC. These courses could be used as models for NSOs trying to develop their own set of courses.

Training courses by career stage

One of the difficulties of having a comprehensive training set of courses is addressing the needs of the staff at all stages of their careers. New staff need to acquire a variety of skills, from basic knowledge about the roles of NSOs and the NSS to specific knowledge about their job area. Staff that are advanced in their career have other needs, such as management courses or advanced statistical training. Some of this training is available through regional or international training platforms such as UN SDG: Learn. When possible, NSOs should use existing training rather than spending the time to develop their own.

Focus on the first year:

The skills needed by first year employees vary widely by country. Some countries have university courses specifically oriented for knowledge of official statistics and others do not. Each NSO needs to be aware of the starting level of their staff and adapt the set of courses accordingly. Overall, the following courses/skills are recommended for first year training:

1. Courses that highlight fundamental aspects of international official statistics and at the NSO, such as:
 - The role of the NSO as the leader and organizer of the National Statistical System (NSS) as well as the organization of the NSS
 - Legal framework for statistics
 - The National Statistical Plan and the Code of Good Practices
 - The culture, vision, organization, policy agenda, and communication style of the NSO.
 - Any frameworks chosen by the NSO, such as the Generic Statistical Business Process Model (GSBPM), the Generic Activity model for Statistical Organizations (GAMSO), Data Quality Assessment Framework (DQAF)

- Data confidentiality, ethics and code of practice
- Introduction to UN fundamental principles of statistics.
- 2. Courses that focus on statistical skills. These can be divided into two main types:
 - Cross cutting courses which should be taken by all statisticians regardless of area of focus:
 - Fundamental principles of official statistics
 - Fundamentals of censuses, surveys and sampling
 - Basic statistical analysis techniques, including disaggregation age and sex
 - Introduction to the Sustainable Development Goals indicators
 - Courses specific to the area of specialization:
 - Census and survey planning and management
 - Classifications, international standards and nomenclatures specific to the specialization area of the employee.
 - Fundamental documentation, methodological documents and reference materials specific to the specialization area of the employee.

Various regional organizations and NSOs have frameworks or experience that can be drawn upon to develop a strong first year set of courses. SIAP has developed a core skills framework for competency in specific areas (e.g., national accounts or agricultural statistics). Being able to measure skills of incoming staff against such a framework could give NSOs a better view of which courses each staff person needs to attend.

A good example of a clear set of requirements for first year employees exists in the Central Statistics Office (CSO) in Ireland. First year employees participate in the Smart Start program, which includes a complete skills register, introduction to the GSBPM, fundamentals of statistics, IT user awareness and a year of SAS courses.

Focus on senior staff:

As noted, senior staff often require training in management skills or advanced statistical topics. Both of these types of training can be hard to find. Several countries noted having a separate ministry from the NSO that offered management training to staff, but often that training was limited or came too late in their career. For example, Nepal has a Ministry that offers management training after staff has been in the Central Bureau of Statistics for ten or more years; often this training is needed sooner. Advanced statistical skills training can be difficult to find. One of the most common sources was partnering with a regional or international organization to find a consultant to teach a course. When courses are difficult to source, a training of trainers structure is recommended, where an NSO staff member or two are identified to learn from the training in such a way that they can teach it themselves in the future.

Helping ensure NSOs identify their needs and international organizations collaborate in meeting such needs

The interviews conducted for the report that preceded this document revealed that at times training offered by regional or international organizations does not meet the needs of the NSO. There are various reasons this disconnect can occur. One reason may be that the NSO does not have their own

needs clearly defined. Ideally, each NSO would develop a set of courses that notes objectives and gaps and such a document would be made readily available to regional and international organizations. The CSO of Myanmar is a good example of a country that has developed such a document and thus, are able to ensure that their requests for assistance from external organizations are targeted and clear.

Another reason that NSO needs are disconnected may be that international organizations offer courses to many nations at once and NSOs participate because they provide prestige or better opportunities, not because the skills are truly needed.

During the workshop we discussed whether there are better ways that regional and international organizations can meet the needs of NSOs. The recommendations provided are as follows:

- Assessments, strategic development plans and steering groups: most regional organizations noted that they conduct an assessment of NSOs to gather needs. For example, SESRIC sends a survey to heads of NSOs every other year. The regional organizations note that these assessments can be ineffective. Some ideas for improvement of assessment could be:
 - a. For NSOs to develop individual strategic development plans so that needs are more clearly outlined.
 - b. To conduct assessments through subject specific steering committees. For example, there could be a steering committee on national accounts that includes the heads of the national accounts departments of NSOs. This may help identify needs in a more granular way. SIAP has done several subject specific assessments that worked well.
- Structured and strategic: Many regional and international organizations noted that often the training they offer is reactive and ad hoc. Such organizations could benefit from having more structured and strategic training curricula.
- Tied to NSO strategic plans: Another way to help the courses meet the specific needs of the NSO would be to tie them directly to the NSO strategic plan to ensure that the objectives and outcomes of the course align with those of the NSO.
- Benchmarking: Workshop participants identified benchmarking indicators or statistical production as a way to identify NSO needs. Two ways of benchmarking were discussed:
 - a. Across countries: this could have the added benefit of identifying countries that are strong in a given area and could provide training to countries who are not as strong.
 - b. Compared to international standards: indicators for specific areas with clear international standards, such as the SDGs, could be evaluated as a way to identify where countries need help.
- International platform that is a one-stop-shop for training: Such a platform could have many benefits, such as providing a clear set of courses with high standards so that NSOs can use them as a point of reference. Some of these courses could be starting points; a way to identify students that are very interested in the course subject, and then the regional and international organizations could follow up with in person courses. Finally, these courses would help NSOs avoid investing time and energy into a course that already exists.

Summing up

Training curricula for NSOs vary widely and there is no clear international recommendation on what should be included in such a set of courses. To begin to fill this gap, a workshop was conducted with approximately 25 participants from international and regional organizations and from National Statistical Offices. The recommendations for a standard set of training courses at NSOs outlined above are the results of that workshop. The GIST will be discussing follow up activities resulting from these recommendations.

Glossary

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| ANSD | National Agency of Statistics and Demography (Agence nationale de la Statistique et de la Démographie) of Senegal |
| CBS | Central Bureau of Statistics of Nepal |
| CSA | Central Statistics Agency of Ethiopia |
| CSO | Central Statistics Office of Grenada, Ireland and Myanmar |
| ENCE | National School of Statistical Sciences (Escola Nacional de Ciências Estatísticas) of Brazil |
| ENSAE | National School of Statistics and Economic Analysis (Ecole nationale de la statistique et de l'Analyse Economique) in Senegal |
| GIST | Global Network of Institutions for Statistical Training |
| GSBPM | Generic Statistical Business Process Model |
| HCP | High Commission for Planning of Morocco |
| IBGE | Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística) |
| IDEP | African Institute for Economic Development and Planning |
| MOOCs | Massive Open Online Courses |
| NSO | National Statistical Office |
| NSS | National Statistical System |
| PSRTI | Philippine Statistical Research and Training Institute |
| SAS | Statistical Analysis Software |
| SDG | Sustainable Development Goals |
| SESRIC | Statistical, Economic and Social Research and Training Centre for Islamic Countries |
| SIAP | Statistical Institute for Asia and the Pacific |
| SSB | Statistics Norway |
| ToT | Training of Trainers |
| UN | United Nations |