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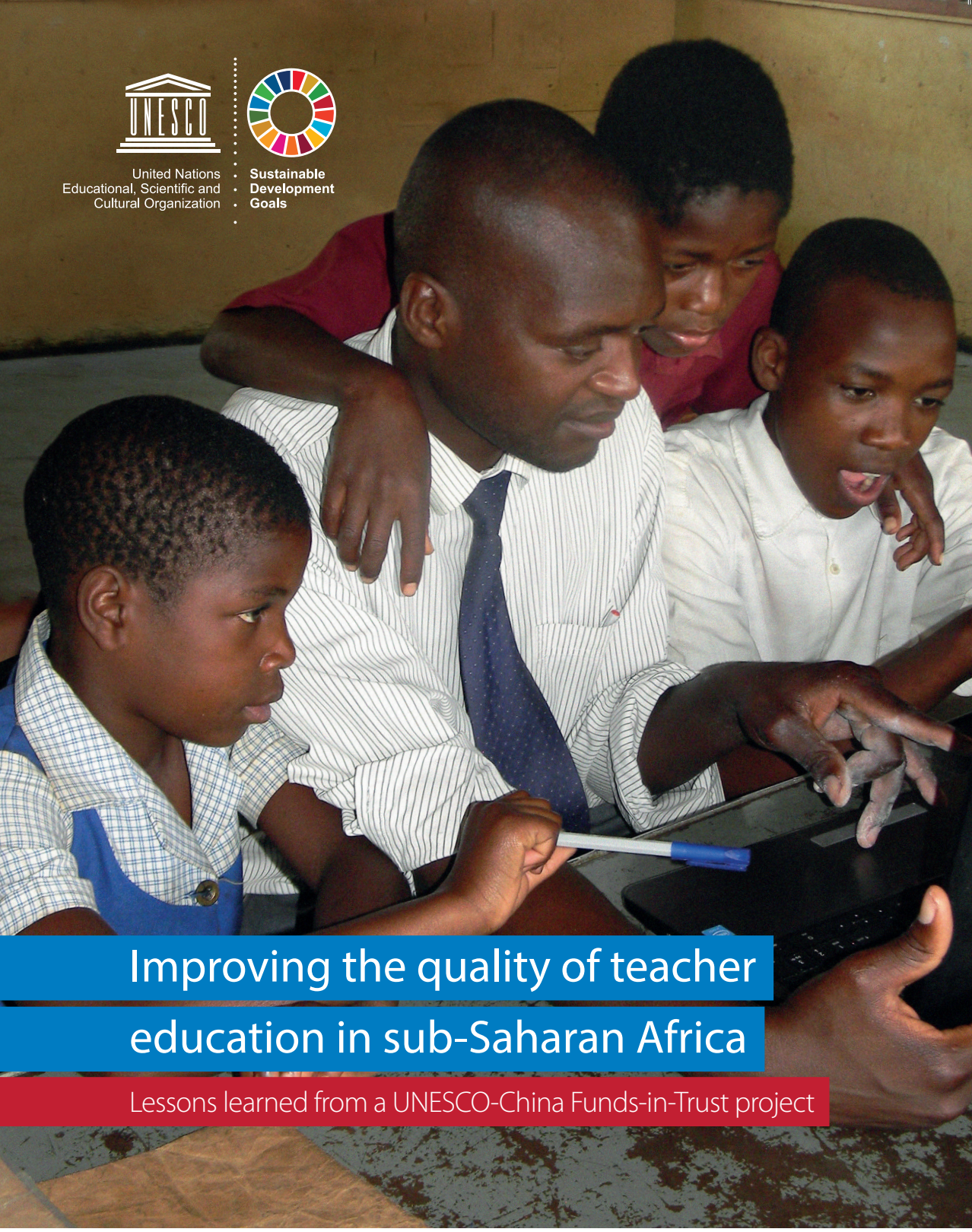
Sustainable
Development
Goals



Improving the quality of teacher education in sub-Saharan Africa

Lessons learned from a UNESCO-China Funds-in-Trust project

Education 2030

UNESCO Education Sector

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United Nations Educational, Scientific and Cultural Organization

Education Sector

Education 2030

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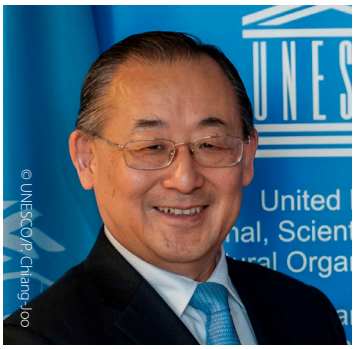
Improving the quality of teacher education in sub-Saharan Africa

Lessons learned from a UNESCO-China Funds-in-Trust project

Foreword

In line with the Organization's priority Africa policy and strategy on teachers, UNESCO and the Government of the People's Republic of China initiated the UNESCO-China Funds-in-Trust project to enhance the capacity of key teacher training Institutions in selected countries in sub-Saharan Africa.



The countries chosen were among those facing acute teacher challenges in terms of institutional capacity of the teacher training institutions, quality and scope of training programmes. The project aimed at promoting the use of information and communication technology to improve teacher education and training in Congo, Côte d'Ivoire, the Democratic Republic of the Congo, Ethiopia, Liberia, Namibia, United Republic of Tanzania, Togo, Uganda and Zambia.

Thanks to the generous contribution of US$12 million by the Government of the People's Republic of China, UNESCO was able to support these ten countries in strengthening the capacity of their key teacher training institutions, improving the knowledge and competences of educators as well as the quality of instructional materials, innovating pedagogical practices; and networking teacher training institutions and practitioners within and beyond the project countries.

The execution of the project has revealed positive lessons worth sharing, notably:

- Country ownership and leadership was ensured through the active engagement of the Ministries of Education, teacher training institutions and teachers;
- The alignment of national priorities with Sustainable Development Goal 4.c ,which calls for "by 2030, substantially increasing the supply of qualified teachers, including through international cooperation for teacher training in developing countries and Small Island developing States". UNESCO, including its International Institute for Capacity Building in Africa and Field Offices, a donor partner, several countries and experts worked together to make significant progress in quality teacher training;
- Public-private partnerships proved successful and were training characterized by local private companies joining the process, contributing financial and technical expertise.

I hope that other countries, researchers, teacher training institutions, donors and education partners will find the present booklet a source of inspiration. It is full of practical examples for stronger international cooperation for bridging the teacher quality and quantity gaps in Africa.

Qian TANG, PhD
Assistant Director-General
for Education, UNESCO

Acknowledgements

The UNESCO-CFIT project with the support of the Government of the People's Republic of China was launched in 2012, first involving three countries and progressively rolled out to ten countries between 2012 and 2017. Several partners were involved in its implementation, ranging from global levels to local levels, including UNESCO entities at Headquarters and Field offices.

Thanks to the generous financial contribution from the Government of the People's Republic of China, which was shared equally among the ten countries, it was possible for UNESCO to provide support to the ten project countries.

The project drew on the expertise available to all partners within and outside the project countries, including China and UNESCO. The excellent collaboration among the teams of quality experts mobilized at different stages of the project implementation, including Mr Simon Broek and Mr Gert Lindeboom from Ockham-Institute for Policy Support is acknowledged.

The design, implementation, monitoring and reporting on the project's performance were made possible by the effective leadership and management of following Chiefs of Section Mr Francesc Pedro, Ms Maki Hayashikawa and Mr Edem Adubra, under whose responsibility the global coordination and monitoring of the project was placed. To them we say thank you.

Final thank you goes to the education specialists of the Education Sector, Knowledge Management and Information Unit and several others, including Ms Jianhong Dong, Ms Gunay Faradova, Ms Lydie Diane Kente, Mr Haiqi Meng, Mr Fengchun Miao, Ms Florence Ssereo, Ms Aurora Cheung Sze-Ming and Mr Tan Yanging who made valuable inputs.

This publication is a demonstration of what teamwork, partnership and cooperation can achieve.

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Improving the quality of teacher education in sub-Saharan Africa

This booklet is about the UNESCO-China Funds-in-Trust project and the different stages of its implementation as a cascade process involving multiple actors.

The booklet describes how the project started, the choice of beneficiary countries, the implementation strategies and its achievements.

The different sections numbered one to four describe particular aspects of the project, using country cases to illustrate how the success of the project was due to strong country ownership and leadership. UNESCO, in partnership with the Government of the People's Republic of China, initiated the project to enhance the institutional capacity and the professional development of teacher educators through ICT-supported learning, teaching and research. This technology aided the transformation of capacity teacher training through digitalization of instructional materials. Networking of experts and institutions and South-South Cooperation are some of the unique features of the project.

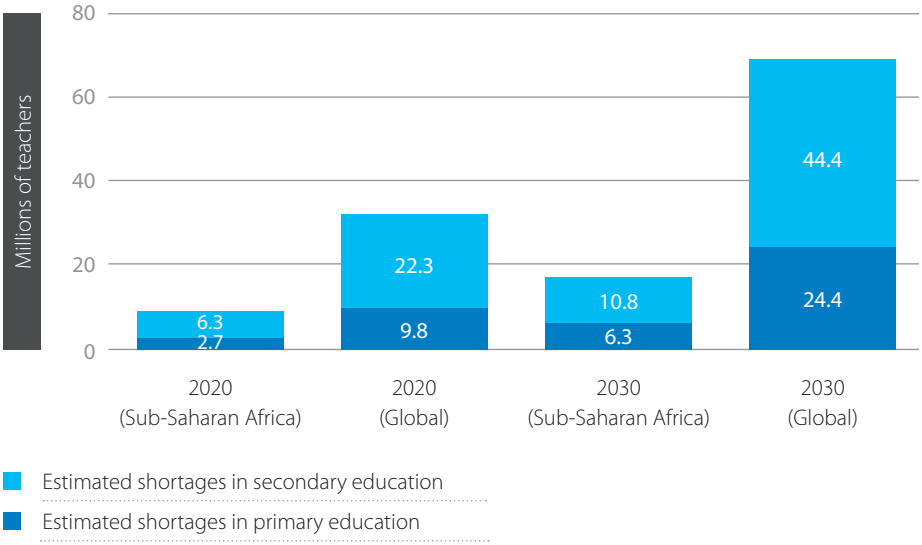
ICT literacy and lesson planning workshop for teacher trainers.

1. Why was the UNESCO-CFIT project launched?

The number of well-trained teachers in sub-Saharan Africa needs to increase

The fact that there are more schoolchildren in the world than ever before reflects evident developmental progress. However, many of these children still don't leave school with basic literacy or mathematical skills.

The main reason for this is a shortage of well-trained teachers. Teachers are the most critical factor in the quality of education and student learning outcomes, so a shortage of trained teachers jeopardizes the quality, inclusiveness and equity in education. While the acute shortage of well-qualified teachers is a global concern, the largest shortage is found in sub-Saharan Africa.



Source: UNESCO Institute for Statistics database

As quality and equity in global education are prominent features of the UNESCO-led Education for All (EFA) movement, the UNESCO-CFIT project was initially launched to contribute to EFA Goal 6 on quality of education. Launched in 2012, the aim of the project was to achieve quality, equity and inclusiveness in sub-Saharan African education, using technology to improve the methods in teacher training institutes (TTIs).

Aligned with other development goals

The project's focus on teachers also fits Sustainable Development Goal (SDG) 4.c – which aims to "ensure that teachers and educators are empowered, adequately recruited, well-trained, professionally qualified, motivated and supported within well-resourced, efficient and effective governed systems".

Not only does the project help to achieve the aims of SDG 4 but it contributes to other SDGs such as SDG 1 (on poverty reduction), SDG 3 (on good health and well-being), SDG 9 (on industry, innovation and infrastructure) and SDG 11 (on sustainable cities and communities). It also fits UNESCO's education priorities.

Sub-Saharan Africa needs more well-qualified teachers

70%

of sub-Saharan African countries face acute teacher shortages – rising to 90% at secondary level

Average pupil:teacher ratio at primary level is

42:1

rising to more than **60:1** in some countries

Data source: UNESCO Institute for Statistics database

The role of teacher training institutes (TTIs) in improving the quality of teacher education

Addressing this shortage of qualified teachers calls for comprehensive teacher policies that cover all areas relating to the teaching profession such as training, recruitment, status, working conditions and salary. In many countries where teacher shortages are prevalent, TTIs do not have the capacity to produce sufficient numbers of qualified teachers. Therefore, achieving the project aims requires a focus on developing the capacity of these TTIs. To support these countries in their own efforts to improve the situation, UNESCO engaged in the CFIT project to support the development of institutional capacity in a limited number of TTIs, across ten carefully selected countries.

Why is ICT so crucial for improving teacher training?

ICT plays a central role in the UNESCO-CFIT project for the following reasons:

- Devices and applications offer great potential for growing teacher training access and improving the quality of teaching and learning materials;
- As it facilitates distance learning, ICT helps train more teachers such as those in harder-to-access regions;
- Using open-source materials reduces – or in some cases totally negates – the usual bottlenecks associated with producing, distributing and updating hard copy learning materials;
- Introducing ICT into TTIs indirectly encourages the development of new skills and enables the introduction of blended pedagogies into classrooms;
- ICT also filters good habits down through the education system – teacher educators that are more experienced with ICT are more likely to pass this knowledge on to their students, who in turn will go on to use ICT themselves when they gather data for projects, look up information or learn from peers;

- Introducing ICT to teacher educators can reveal new ways to improve teaching and learning materials, particularly in regions with limited ICT penetration such as sub-Saharan Africa. When teacher educators are more aware of the value of ICT in education, they are also more likely to reconsider existing habits and processes – and this can contribute to the expansion of using ICT in the wider education system;
- ICT provides unique opportunities to share practical experiences with colleagues and/or educational experts, regardless of their location. This can further boost progress in quality teaching and learning in TTIs;
- In addition, peer-to-peer networking and the sharing of information, knowledge and experiences can reduce the feeling of isolation among teachers, especially those in remote locations;
- New technology can also strengthen formal and informal interactions between TTIs within and across countries.

2. The UNESCO-CFIT project aims and implementation approach

Project aims

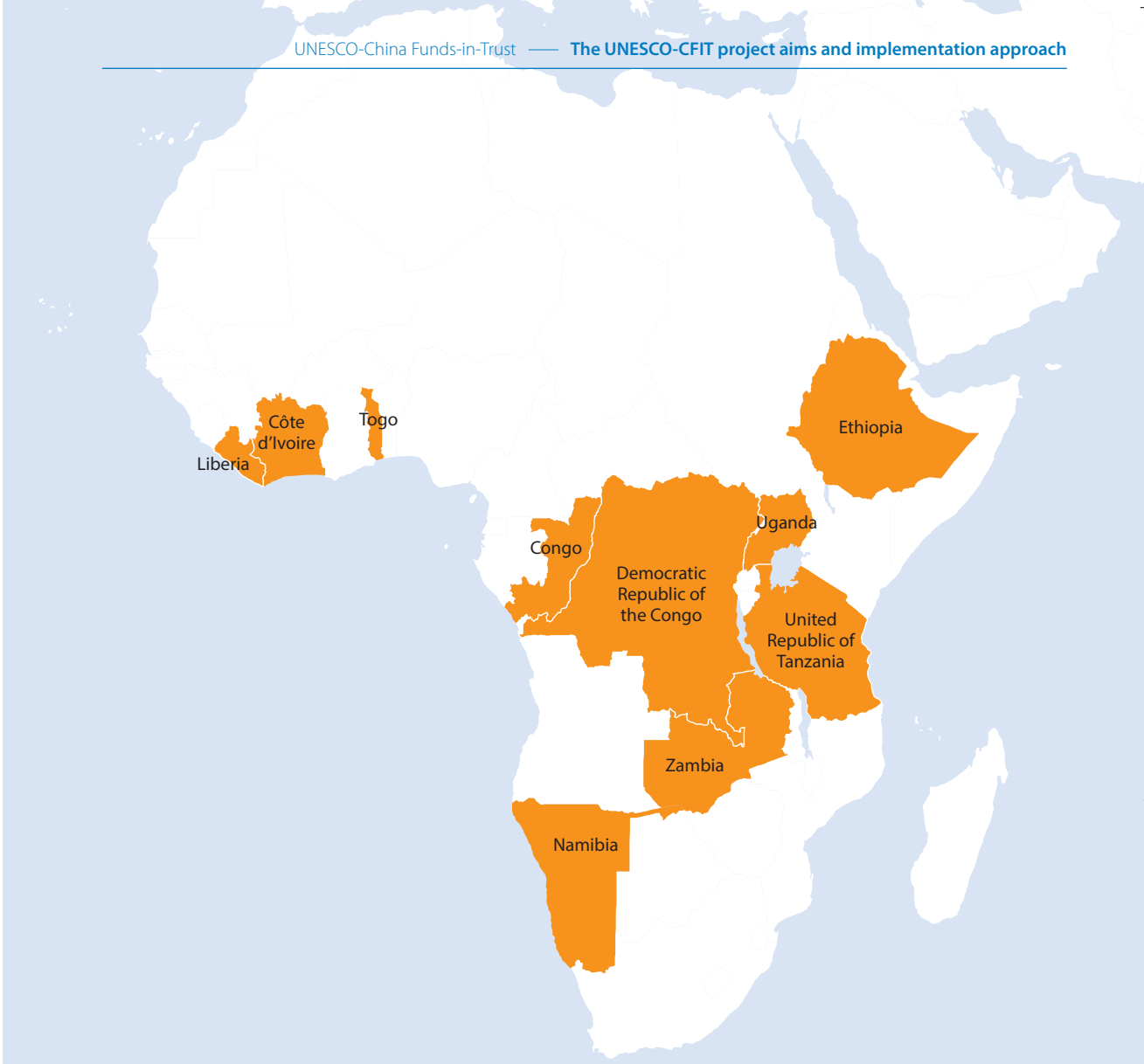
The UNESCO-CFIT project is a flagship project that was launched to help teacher training institutions (TTIs) deliver increased numbers of well-qualified teachers in sub-Saharan Africa. It aims to do this using ICT to improve the quality of teacher training programmes provided to both existing and trainee teachers across the ten target countries.

Specifically, the project aims to help (TTIs):

1. Increase the number of well-qualified teachers through quality programmes;
2. Provide improved continuous professional development (CPD) to teachers;
3. Equip teacher trainers and teachers with ICT skills to improve the quality of teaching and the learning experience for students;
4. Create networks so they can share knowledge, effective strategies and practices with policymakers, institutional leaders and other stakeholders.

"Thanks to the UNESCO-CFIT project we've been shown how to modernize our course materials through the internet. Before, we were dependent on outdated libraries. ICT now plays a big part in our education and the creation of our own modules."

In-service teacher/course developer, Moduli Teacher College, United Republic of Tanzania



Target countries

Target countries were selected based on a number of factors which include:

1 Their performance against global education objectives;

2 Matching priorities between UNESCO's sub-Saharan Africa programme and China's development cooperation policy;

3 Focusing on countries whose efforts towards global education goals were severely hampered by teacher shortages, low qualification levels and/or insufficient teacher support;

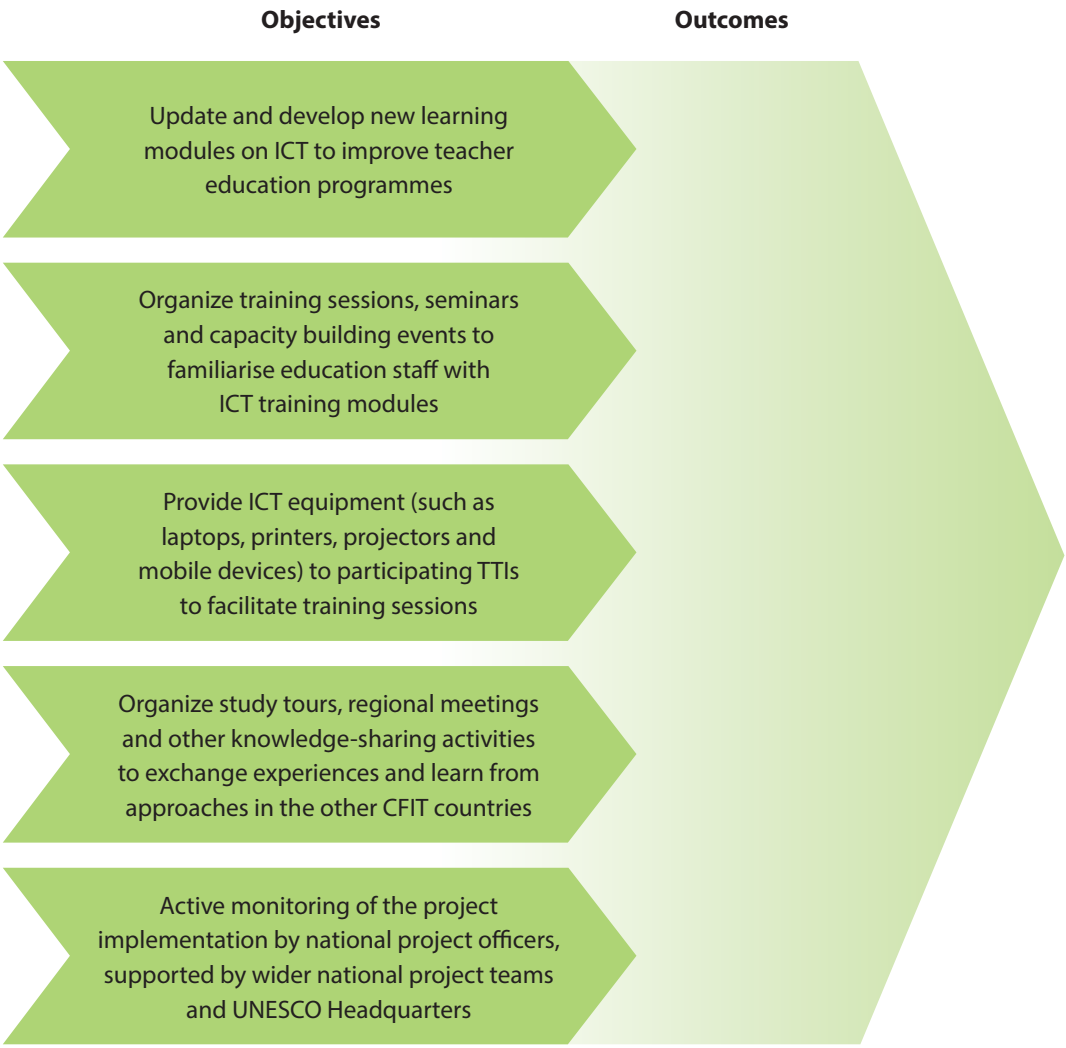
4 Selecting countries that represent different regions in sub-Saharan Africa, with varying social, cultural and economic contexts.

Active teaching and learning workshop.

Activities

The People's Republic of China (PRC) initially provided US$8 million for the first phase of the UNESCO-CFIT project. This funding was used to initially implement the project in three countries (Côte d'Ivoire, Ethiopia and Namibia), and then an additional five countries (Congo, Democratic Republic of the Congo, Liberia, United Republic of Tanzania and Uganda) once there was some experience to build upon. Eventually, the total beneficiary countries would total 10, although Togo and Zambia were added to the project during the second phase of the project.

As each individual country presents its own nuances, the activities deployed varied substantially as is demonstrated in the examples in the forthcoming sections. Nonetheless, the implementation activities were all related to the five broader CFIT objectives of the project as detailed here.


Objectives
Outcomes
Update and develop new learning modules on ICT to improve teacher education programmes
Organize training sessions, seminars and capacity building events to familiarise education staff with ICT training modules
Provide ICT equipment (such as laptops, printers, projectors and mobile devices) to participating TTIs to facilitate training sessions
Organize study tours, regional meetings and other knowledge-sharing activities to exchange experiences and learn from approaches in the other CFIT countries
Active monitoring of the project implementation by national project officers, supported by wider national project teams and UNESCO Headquarters

Country example: Côte d'Ivoire

Expanding the outreach of in-service teacher training through distance learning

In Côte d'Ivoire, the project was able to strengthen the capacities of school inspectors and pedagogical counsellors by enhancing in-service teacher training. This was done by focusing on developing online training modules that assisted teachers in their practice, and which could be used at will by in-service trainers.

Key details:

- The project supported the development of teaching modules for various subjects. The modules were developed in close collaboration with the future end users through group discussions, video conferences, seminars and information sessions;
- An online platform for distance training was then set up to provide wider access to these modules. While the project budget limited the range of modules that could be created, the UNESCO-CFIT team liaised with other donors to get additional support – providing clear evidence of the successful partnership approach of the project;
- To facilitate the training of teacher educators and in-service teachers, the project received access to seven training centres, each equipped with 20 computers, in regions across the country. As a consequence, teachers had access to the online training materials developed by the project – and video conferencing was used to link ten TTIs across the country;
- An important impact of the project was that the various education stakeholders in the country became aware of the advantages of using ICT in education. These stakeholders have started to think more about how to apply ICT into teaching methods. Moreover, after the training provided by the UNESCO-CFIT project, participants now have the skills to bring their ideas into practice.

10 training modules

were produced and put on the online training platform for continuous teacher training for primary school teachers

8 online training modules

were produced and put on the online training platform for continuous teacher training for primary school teachers

106 non-teaching staff

were trained in designing, setting up and/or managing digital education content

30 education professionals

were trained to become online learning facilitators

400 assistant teachers

received training on how to improve their classroom performance thanks to the UNESCO-CFIT training centres

7 TTIs

received computer equipment and 3 TTIs received additional communication equipment

Source: Country and external evaluation reports

Project implementation approach

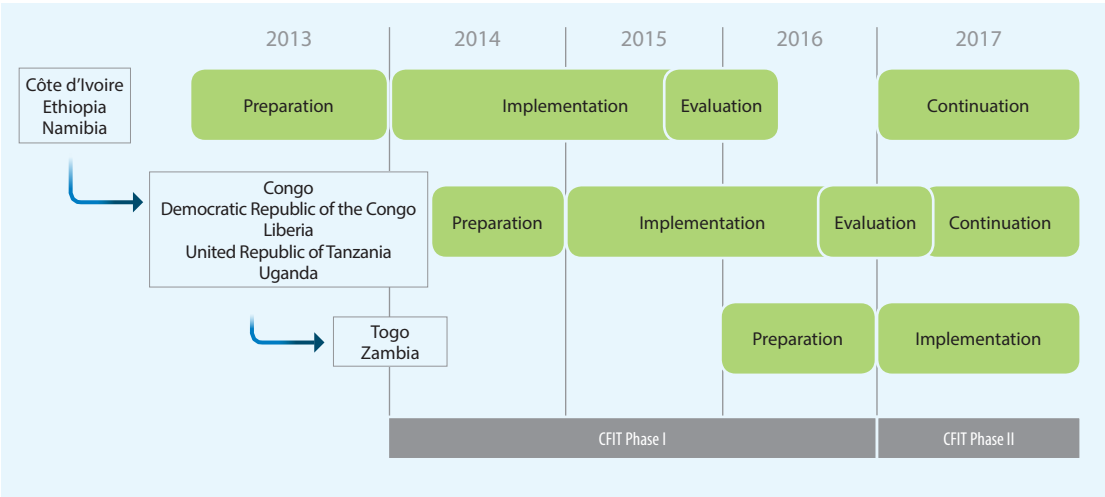
The UNESCO-CFIT approach is about identifying needs and mobilising existing knowledge at the relevant level and applying this knowledge to help teachers improve the quality of their teaching through ICT. Doing this successfully across ten sub-Saharan African countries – each with varying needs and different levels of institutional capacity – required flexibility.

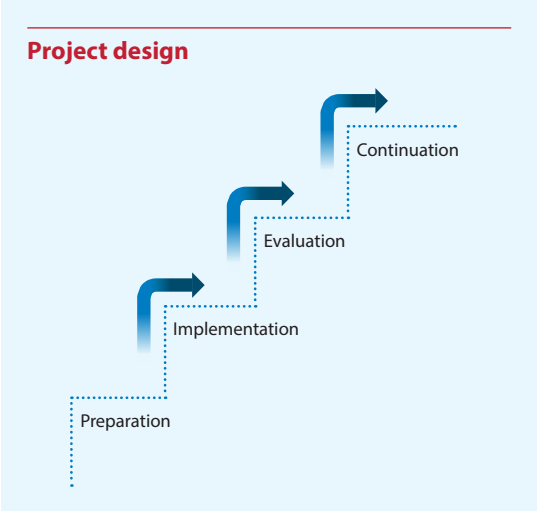
To highlight what makes the UNESCO-CFIT project unique, its key implementation characteristics are listed in subsections below. In addition, there are some examples of how the project was rolled out in different countries.

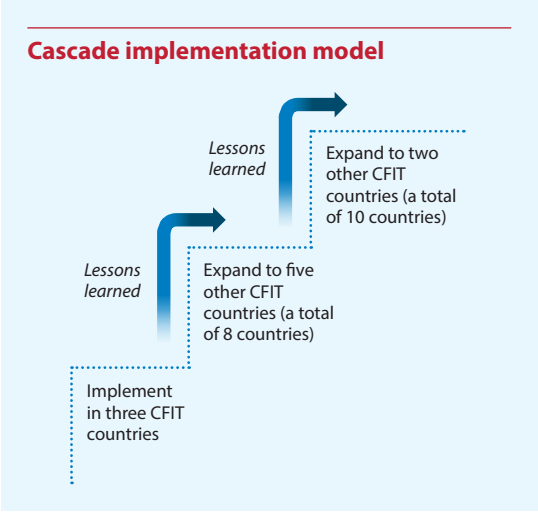
Phased implementation

The first phase of the UNESCO-CFIT project was implemented in stages using a cascade model. This effectively meant that each country went through intense preparation, evidence-based planning and external evaluation. The cascade model was set up in such a way as to emphasize learning from experiences in the previous project stages before moving on to the next stage of implementation.

The first phase of the project started out with an extensive preparatory needs assessment in three countries: Côte d'Ivoire, Ethiopia and Namibia. Once the needs assessment had been conducted for each country, the project implementation commenced. The mid-term evaluation showed positive results and preparations started in the second group of countries (Uganda, Liberia, United Republic of Tanzania, Congo and Democratic Republic of the Congo), building on the experiences from the first three countries.







Source: Authors

Based on the positive results of the external evaluation that was conducted in 2016, the People's Republic of China decided to extend the project into phase two. Its government made an additional contribution of US$4 million which enabled UNESCO to extend the project to Togo and Zambia, bringing the number of target countries to ten. Preparations to roll the project out into these new countries started in 2016 – to allow parallel implementation from 2017 onwards.

UNESCO-CFIT in Namibia

Improving teacher training by enabling learning from existing teaching practices

The project focused on building the capacity of teacher educators in primary and pre-primary education to conduct hands-on research at the University of Namibia. After equipping them with the methodology to observe teaching practices, the UNESCO-CFIT project enabled teacher educators to visit selected schools in 14 regions to better understand existing teacher practices, challenges, and areas for further improvement.

Key activities:

- Based on the identified needs of classroom teachers, the project helped teacher educators to design hands-on strategies to address any challenges they had observed. Practical learning materials were developed into a pedagogical toolkit to support teaching literacy and numeracy competencies;
- The project also supported teacher educators to show both pre-service teacher trainees and in-service teachers how to use this pedagogical toolkit. Two pilot schools were selected in each of the fourteen regions, where teacher educators and ministry officials introduced the toolkits to the teaching staff and followed up the actual use of the toolkits in classrooms;
- An indirect effect of the project is that teacher educators at the University of Namibia are more aware of the challenges in classrooms across the country. This new knowledge is being applied when training pre-service teacher trainees. It is also used in CPD to in-service professionals;
- UNESCO-CFIT also helped the University of Namibia to set up an online practitioners forum named Kopano. This forum has provided teachers and teacher educators from around the country with a forum to discuss their daily challenges. Such exchanges are crucial in providing a lifeline for previously isolated teachers from remote regions to learn from others;
- Teaching professionals also acquired hands-on classroom experience. These professionals included educators from the Department of Early Childhood and Lower Primary Education at the University of Namibia, in addition to education officials across the 14 regional education offices.

A comprehensive pedagogical toolkit was developed and made available to

28 participating schools

and 150 graduating teacher trainees

120 professionals

gained additional competencies in action research, as well as hands-on experience of classroom practice across the country

842 people participated

in the various training sessions, seminars and workshops

50 classroom teachers

in pre-primary education were trained in integrating ICT in teaching and learning

700 teachers

from around the country registered on the online practitioners forum called Kopano

208 pieces of equipment

were procured and disseminated among

28 schools across the 14 regions

Source: Country and external evaluation reports

Preparation based on the needs of each country

For a multinational development project such as UNESCO-CFIT there is no one-size-fits-all solution. Target countries differ in their stages of development, education systems, the challenges they face with regard to TTIs and teachers, and the specific needs for policy intervention.

The UNESCO-CFIT approach is built on an extensive needs assessment. Truly sustainable results can only be achieved when a project is aligned with national priorities and policy needs. Therefore, these needs assessments formed the basis for setting the scope and content of each national project.

National project teams validated the findings from the needs assessments and used the data to develop the project documents and specific work plans. In this sense, the projects were effectively national projects as they were primarily owned by the national stakeholders in each country.

Shortage of primary teachers in Namibia

As the most qualified teachers in Namibia tend to teach higher grades, there was a shortage of qualified teachers in primary education. Many teachers in primary education do not have the right qualifications, while most teachers in pre-primary education have no qualifications at all. Therefore, the country project team decided that the UNESCO-CFIT project should dedicate itself to improving the quality of pre-primary and primary school teachers.

Alignment with and synergies between global, regional and national commitments and agendas

The UNESCO-CFIT project does not only respond to specific country needs but it is deliberately positioned to align with other regional and global approaches. This improves the relevance and strengthens the impact of the project.

The project is linked to regional and global agendas, such as the Education for All (EFA) goals, the education-related Millennium Development Goals (relevant up until 2015), and the SDGs that succeeded them. In countries supported by the Global Partnership of Education, the UNESCO-CFIT project specifically builds on the work of local education groups, while at the same time aligning with UNESCO's priority on Africa.

Linking up with broader approaches and projects amplifies the potential of national action. It also offers the possibility to use these platforms to communicate the lessons that have been learnt to other countries facing similar challenges.

The potential of country ownership is clear in the dedication shown by the Ministry of Education in the Democratic Republic of the Congo, which committed itself to initiating additional capacity-developing activities to further sustain the results from the UNESCO-CFIT project. The Ministry sees the project as the cornerstone of its teacher education policy as it has established a structure and a vision that has found its place among all relevant stakeholders.

Country ownership in implementation

The UNESCO-CFIT project is built around country ownership. Each country has implemented and owned the projects through its own national project team, which consists of teacher education experts in policymaking, TTIs, and individuals at universities who are fully committed to designing and implementing the project activities.

UNESCO-CFIT does not fund these national project teams. Establishing and operating these teams is the responsibility of the beneficiary country. Only the National Project Officer – the individual responsible for day-to-day implementation and the one who supports the project team – is actually sponsored by the UNESCO-CFIT project.

Country ownership is essential as UNESCO-CFIT products and results are used by TTIs and teachers throughout the country. Hence they are not 'UNESCO products' as such, but nationally produced products that can be mainstreamed across the TTIs and schools in any given country. In addition, the project has encouraged hiring national experts throughout the design and implementation stages.

UNESCO-CFIT in Ethiopia

Improving teachers' skills and practices and increasing teacher numbers

The UNESCO-CFIT project in Ethiopia complemented the government's own objectives to increase the supply of qualified teachers through pre-service, in-service and continuous professional development (CPD) strategies. The project specifically emphasized the improvement of English language skills and pedagogical practices (by integrating ICT), in addition to increasing the number of science and mathematics teachers.

Key details

By improving the capacity of TTIs the project:

- Enhanced and broadened the CPD programmes to reach more teachers through ICT-based solutions;
- Updated teaching and learning environments by producing new courses that addressed the practical needs of teachers;
- Improved the English language competencies of both pre- and in-service teachers through training programmes and capacity development workshops;
- Improved daily teaching and learning activities through ICT-enhanced classrooms in TTIs using video broadcasting systems and model libraries;
- Improved teaching methodologies of pre- and in-service science and mathematics teachers, especially through ICT;
- Empowered teacher educators to design and conduct research to improve the quality of teacher training;
- Reinforced networking among the country's TTIs and knowledge-sharing around teacher education in general;
- Developed and delivered online learning modules, provided face-to-face trainings and installed equipment to facilitate distance learning of in-service teachers in cluster schools;
- Brought the deans of each of Ethiopia's TTIs together in November 2015. This offered an effective way to develop the quality of teacher education in the country by mainstreaming the UNESCO-CFIT approach across the country.

More than

50 teacher educators

were trained in e-learning content development, e-assessment and using ICT facilities for teaching/learning

More than

15,000 trainee teachers

pre-service and in-service in 6 TTIs were trained using more up-to-date ICT, while languages, science and mathematics courses/modules were produced

Nearly

8,000 trainee teachers

pre-service and in-service received support from ICT facilities such as language lab, smart rooms, and an e-library

2 video conferencing systems

were installed across two TTIs and ten cluster schools

Source: Country and external evaluation reports

Collaborative partnership at all levels

Improving the quality of teachers is a complex task that brings together elements from the entire educational system of a country. It concerns teachers in primary education, secondary education and technical vocational education and training. It also involves the institutions (often higher education) that provide teacher training.

> ***"There was such a team effort during the material development. Furthermore, the pre- and lower primary department really got to know each other's strengths and we benefitted from that. The teacher lecturers have become closer and work much more as a team."***
>
> *Teacher educator in Namibia*

Therefore, effective collaboration and partnership have been essential at all levels for the UNESCO-CFIT approach. The project focuses on capacity building in TTIs and targets both teachers and institutional leadership and the launch of the project in each country has involved all relevant stakeholders.

Finding other donors in Côte d'Ivoire

In Côte d'Ivoire, the UNESCO-CFIT project budget was not sufficient to develop the entire range of modules that were needed. To overcome this challenge, the project team coordinated with other donors to support the development of additional training modules.

Training sessions for 250 Congolese teachers on ICT.

In countries where the project involved national policy, it explicitly linked up with the work of other international organizations that are focused on teacher quality – creating cross-links and synergies between various projects. For example, UNESCO-CFIT established links in the Democratic Republic of the Congo with Agence Française de Développement (AFD), the World Bank and the United States Agency for International Development. In Uganda, the project connected with the Varkey Foundation and other NGOs.

All of this led to an environment that made it easier to realize the national teacher policies of each country.

Working with other international organizations in the Democratic Republic of the Congo

In the Democratic Republic of the Congo the project helped develop an online platform in which modules are offered to in-service teachers. The platform was also made to be accessible offline (through CD-ROM and USB). To populate the platform the UNESCO-CFIT project, the World Bank and AFD all developed different modules.

ICT literacy and integration training of trainers in Namibia 18-20 May 2015.

Committed donor

As the donor, the government of the People's Republic of China had a high level of involvement in implementing the UNESCO-CFIT. Being China's first project focused on developing human capacity in Africa, it was seen as a test case for potential future development cooperation.

The project was implemented with the active involvement of the Chinese embassies. They were present at various meetings and contributed when it came to finding solutions to different problems. Embassy staff also functioned as a liaison between each of the target countries and other Chinese partners that contributed to the project. UNESCO-CFIT was also supported by other Chinese initiatives such as the UNESCO Great Wall Fellowship programme, for example.

Another effective example of South–South cooperation is the fact that UNESCO-CFIT participants were offered the opportunity to enrol in the East China Normal University in Shanghai for one year. This was highly valued as it offered participants an additional opportunity to increase knowledge-sharing and knowledge-development for principal stakeholders in the target countries.

The Chinese Embassy's involvement in the United Republic of Tanzania and the Democratic Republic of the Congo

In the United Republic of Tanzania, the Chinese Embassy stayed involved in the work of the National Project Team throughout the project. The National Project Team kept the Embassy updated on its activities and they actively collaborated to establish contact with Chinese companies that could help implement the project.

In the Democratic Republic of the Congo, the Chinese Embassy negotiated with private companies to procure additional resources (such as computers). For example, HP provided additional equipment that was used for the project.

UNESCO-CFIT in the United Republic of Tanzania

Enhanced ICT competencies for all teachers

The project empowered teacher educators in TTIs by providing training on using ICT for effective teaching and learning. It involved two of the country's key TTIs and eight regional TTIs that all provide science and mathematics education, in addition to the Morogoro TTI which focuses on technical vocational education and training.

Key details:

- The project provided quality pre-service programmes for science and mathematics teachers/tutors by developing ICT-supported innovations in the two key TTIs;
- It strengthened the capacity of two of the country's key TTIs to provide in-service programmes for science and mathematics teachers through blended learning modalities – thus scaling up successful ICT-supported innovations;
- The project also facilitated knowledge sharing by strengthening the support and networking mechanisms that link these two key TTIs with the eight other TTIs that offer diplomas in science and mathematics;
- The project also showcased that ICT can improve the quality of courses and make them more attractive for the students. Through UNESCO-CFIT, the UNESCO ICT competency framework for teachers was also contextualized, refined, improved and validated by the country's Ministry of Education, Science and Technology. The framework will be integrated in the National Framework for Teacher Education Curriculum and will eventually apply to all teachers.

4 ICT Integration Guidebooks

were developed covering all science and mathematics subjects

38 science and mathematics modules

for the Diploma of Higher Education in Science and Mathematics were developed and implemented at 10 teacher colleges

100 education officers and tutors

were trained in ICT integration in teaching and learning

200 tutors from 10 teacher colleges

received training in ICT integration for teaching and learning science and mathematics (this included an introduction to the ICT Competency Standards for Teachers in the United Republic of Tanzania)

2 customized digital libraries

were installed at Monduli Teachers College and Tabora Teachers College

Digitized teaching

and learning materials were made available both online (learning management systems) and offline (CDs)

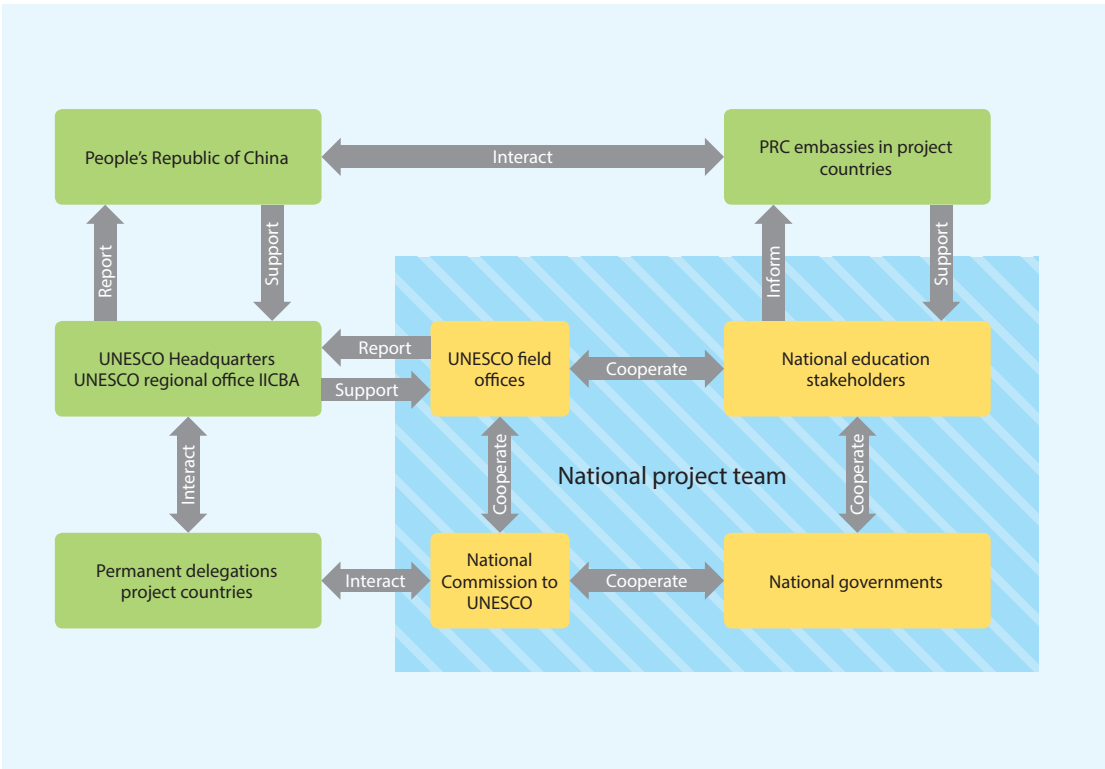
100 computers, 3 servers

and a number of printers and projectors were purchased and installed

Source: Country and external evaluation reports

Effective global coordination role of UNESCO

The success of the UNESCO-CFIT project is also attributed to the fact that it has been implemented within and through the existing UNESCO infrastructure.



The project has evidently benefitted from the convening power of UNESCO. Even more beneficial has been the fact that the project taps into the extensive expertise of UNESCO Headquarters, its regional offices for Africa, and specifically the International Institute for Capacity Building in Africa (IICBA) in Addis Ababa, Ethiopia.

In addition, the permanent delegations to UNESCO in Paris and the National Commissions for UNESCO in each participating country have supported the project by giving more specific attention to country contexts during project implementation.

UNESCO Headquarters managed the relationship with the donor (China). Both the Headquarters and field offices provided technical backstopping to each target country and also ensured the continued involvement of all relevant implementation partners. UNESCO was also responsible for the disbursement of funds, progress monitoring and coordination of administrative processes. Smooth project management was also aided by UNESCO's involvement in developing cooperation agreements, memoranda of understanding, terms of references and contractual agreements among the implementing partners and international experts.

UNESCO-CFIT in Liberia

The first introduction to the potential of ICT

In Liberia, the UNESCO-CFIT project focused on the capacity building of three regional TTIs in addition to the University of Liberia. Through the use of ICT, it aimed to improve the skills, knowledge and competences of teacher educators at these TTIs.

Key details:

- The project helped to modernize the ICT facilities at the University of Liberia and the three regional TTIs through newly developed resource centres – enabling teacher educators to develop their skills;
- Various workshops and trainings were organized to show teacher educators how to introduce ICT elements into their teaching practices to pre-service and in-service teacher trainees;
- As an estimated 80% of the active teaching workforce in Liberia is not able to use a computer, local experts were brought in to develop training modules that took these challenges into account;
- For this purpose, six specific training modules (in English) were developed by local experts and distributed among the TTIs. The modules include basic introductory courses and more advanced courses, all consisting of practical training in Microsoft Office applications. These modules have now been successfully integrated into the national teacher training curriculum.

> ***"Before, I was just afraid for nothing. ICT classes are simple and have been really important for my professional growth."***
>
> *Staff member, University of Liberia*

6 new training modules

were developed

61 teacher educators

and 18 non-teaching TTI staff members were trained in using these modules

100 desktop computers

were installed across the University of Liberia and the 3 regional TTIs

Source: Country and external evaluation reports

Teacher educators ICT training class session in Liberia.

3. Achievements

The UNESCO-CFIT project has achieved a number of key results. This section looks at these successes using examples of how the project strategy has differed in the various target countries.

A positive external evaluation

In 2016, UNESCO commissioned an independent external evaluation of the project[1]. This was conducted on top of the mid-term and continuous assessments that formed part of the project supervision and coordination activities. A team of independent external evaluators visited each of the beneficiary countries and interviewed the various stakeholders involved.

Their report concluded that the UNESCO-CFIT project is relevant to the pre-2015 and post-2015 global educational goals, and UNESCO's own priorities. Moreover, the project is relevant to the educational system needs of each target country as it is well aligned with national priorities and builds on the ownership of national stakeholders.

This evaluation was also positive about the project's results and identifies four key findings:

1. The project improved the capacity of key TTIs in terms of equipment, learning materials and ICT competencies. Thus it contributed to the improvement in teacher education quality at the institutional level;
2. The project contributed to improving the quality of pre-service teacher programmes;
3. The project strengthened the capacity of key TTIs to support the continuous professional development of in-service teachers;
4. The project increased knowledge-sharing among policymakers, institutional leaders and other stakeholders.

[1] Experts from Ockham, Institute for Policy Support, Netherlands

Improved capacity of key TTIs

The initial capacity of key TTIs and teacher educators within them varied substantially between different countries, particularly in terms of ICT competencies. In response to these different needs, the project adopted different approaches in each country.

Examples of project implementation in the different countries have already been referenced in previous sections. In some countries the UNESCO-CFIT project helped to familiarize teacher educators with computers and the possibilities of ICT, for example. In others, the project focused more on advanced skills and supported new methodologies or the implementation of new learning management systems.

Across these diverse contexts the project's approach was tailored to local needs with the direction of local stakeholders. This resulted in substantial improvements in the capacity of key TTIs to incorporate ICT into their teaching.

In Liberia, around 80% of teachers are estimated to be ICT illiterate. For many teacher educators the UNESCO-CFIT project was their first introduction to ICT.

A summary of the UNESCO-CFIT's project's achievements

1. A positive external evaluation
2. Improved capacity of key TTIs
3. Improved pre-service teacher programmes
4. Better continuous professional development support for in-service teachers
5. Improved knowledge-sharing among policymakers, institutional leaders and other stakeholders

Training in the development of blended teaching-learning materials.

Improved pre-service teacher programmes

Improving the capacity of TTIs has had an immediate positive effect on the quality of pre-service teaching programmes. Those teacher educators that participated in the project improved their ICT competencies and learned how to integrate ICT into their teaching.

In the Democratic Republic of the Congo, specific newly-developed ICT modules were made available by the project. Thus, teacher trainees were introduced to new teacher methodologies in mathematics, physics, natural sciences, French, and educational sciences.

The equipment provided through the UNESCO-CFIT project has familiarised teacher educators with the possibilities of ICT. It has also facilitated ICT training of pre-service teacher trainees and offered opportunities to provide blended learning in subject-related courses.

In some countries, the project developed modules and learning management systems that have offered pre-service teacher trainees the practical tools, examples and ideas that they need when they start teaching. By offering such ready examples, pre-service teacher trainees are better prepared for the classroom and are inspired to think about integrating ICT into subject-related courses (such as mathematics, languages, and science).

As a result of the project, the pre-service teaching programmes have been improved in the targeted TTIs. They can now serve as examples in other TTIs across each country and the efforts of the UNESCO-CFIT project are an important first step towards contributing to an increase of students within TTIs.

In the Democratic Republic of the Congo, specific newly-developed ICT modules were made available by the project. Thus, teacher trainees were introduced to new teacher methodologies in mathematics, physics, natural sciences, French, and educational sciences.

UNESCO-CFIT in the Democratic Republic of the Congo

Moving towards an ICT-based CPD model for teachers

In the Democratic Republic of the Congo, the project did not specifically target TTIs. It focused more on setting up an infrastructure to equip in-service teachers with the right skills to integrate ICT into their lessons. At the national level the resource centres and the Executive Training Institute of Primary and Secondary Education (IFCEPS) were targeted.

Key details:

- A functional system of ICT-based in-service teacher training was developed;
- The project encouraged the accession of the educational community in continuing training programmes for teachers;
- The project delivered better training facilities for teachers;
- The professional capacity of supervisors and the teaching skills of teachers were both improved.

The project supported government agencies

3 teacher resource centres and 90 local cluster schools

17 online modules
for in-service teacher training were updated and developed

450 inspectors
(who also conduct teacher training) were trained

4,050 in-service teachers
received training

More than 120 computers and networking equipment
were installed to offer the modules across 90 local cluster schools

Source: Country and external evaluation reports

Better continuous professional development support for in-service teachers

In Ethiopia, Namibia, Côte d'Ivoire, and the Democratic Republic of the Congo the project developed smart applications to more effectively reach in-service teachers across each country.

This was done using the existing national system of cluster schools or making use of the existing structure of educational districts. Local education inspectors were also involved.

Using this network approach and rolling out new technologies has enabled TTIs to reach substantial numbers of in-service teachers. Combined with the increased capacity to use ICT in teaching, the UNESCO-CFIT project has directly strengthened the CPD of in-service teachers across these countries.

In Ethiopia, UNESCO-CFIT equipped ten cluster schools with video conferencing facilities. This not only linked them with other national efforts, but the new video conferencing tools enabled the cluster schools to set up ICT-based CPD programmes for a wider range of schools throughout the country.

"With my newly learned skills I am able to organize my work more efficiently and improve the teaching materials and methods used in my teaching."

In-service teacher,
Democratic Republic of the Congo

Improved knowledge-sharing among policymakers, institutional leaders and other stakeholders

The project led to the set up and strengthening of national networks to facilitate knowledge-sharing in each of the target countries. National online forums were established, which allowed the exchange of practices and ideas between teaching professionals.

In Namibia for instance, this resulted in a practitioners' forum, where teachers were linked not only to each other but to teacher educators. In Ethiopia, the project brought the deans of the country's TTIs together, while in the Democratic Republic of the Congo the developed network for knowledge-sharing focused on teacher educators.

Moreover, the project's implementation brought together national stakeholders ranging from policymakers, institutional leaders, teacher educators and teachers. It also linked up with the work of other donors and helped integrate their efforts into the project.

Finally, the various workshops, seminars and conferences that each country conducted to conceptualize, develop, and implement the UNESCO-CFIT project, offered valuable opportunities for knowledge sharing and exchange between stakeholders.

> ***"Whatever learning material is developed through the support of other donors, we make it available online and integrate it in the platform that has been developed by the project."***
>
> *Senior Lecturer and Director at Kyambogo University, Uganda*

Achievements against the broader UNESCO-CFIT project objectives

Finally, in terms of the five broader UNESCO-CFIT objectives as detailed earlier, some key outcomes are detailed below:

Objectives	Outcomes
Update and develop new learning modules on ICT to improve teacher education programmes	Over 150 learning modules have been developed
Organize training sessions, seminars and capacity building events to familiarise education staff with ICT training modules	Over 4,700 teacher educators, teacher trainees, on-the-job teachers and other education professionals participated
Provide ICT equipment (such as laptops, printers, projectors and mobile devices) to participating TTIs to facilitate training sessions	Over 2,000 pieces of equipment were procured for the various institutions
Organize study tours, regional meetings and other knowledge-sharing activities to exchange experiences and learn from approaches in the other CFIT countries	A total of three study tours were organized to learn from the implementation in other project countries
Active monitoring of the project implementation by national project officers, supported by wider national project teams and UNESCO Headquarters	By the end of Phase I, over 90% of all allocated budgets had been contracted

UNESCO-CFIT in Uganda

Using ICT as a pedagogical tool and repository for training and learning materials

The project was focused on the three key TTIs in the country's education sector. In addition to reinforcing Uganda's existing ICT educational infrastructure, the project enabled these key TTIs to use ICT to support teaching and learning more effectively. As 'hubs of excellence' in primary, secondary and technical and vocational education and training, they led the way for other TTIs.

Key details:

- The project strengthened the ICT infrastructure at the key TTIs to better support blended teacher training for both pre-service and in-service training;
- There was an improvement in teacher educators' competencies in the use ICT as a pedagogical tool for quality teaching and learning of literacy, numeracy and science;
- Networking and partnerships among the TTIs was strengthened to enable them to support school-based continuous professional development;
- An online learning management system was created to boost this initiative. This has worked as a repository for both training and learning materials developed by the teacher educators to support pre-service teachers.

9 learning manuals
were developed

An online training platform
was established for teacher training and promoting the effective use of ICT

272 pieces of equipment
were procured and installed in the three core TTIs

685 teacher educators
and educational officials were trained in ICT-related teacher education matters

Source: Country and external evaluation reports

The Principal of Shimoni Teacher Training College, with the Minister of education and the First Lady of Uganda looking on.

4. Conclusion

Across sub-Saharan Africa, a shortage of well-trained teachers jeopardizes quality, inclusiveness and equity in education. The UNESCO-CFIT project was launched with the aim of addressing this issue, using information communication technology (ICT) to improve the methods in teacher training institutes in countries across the region.

Thanks to the Government of the People's Republic of China, the first phase of the UNESCO-CFIT project, launched in 2012, had an initial budget of US$8 million. This was spent to promote the use of ICT as a way to enhance the capacities of teacher training institutes in sub-Saharan Africa. The first phase of the project was implemented in stages and was initially launched in three countries. A positive external evaluation of this first phase led the Government of the People's Republic of China to contribute an additional US$4 million – making it possible to roll out the project into the remaining target countries, which would eventually total ten.

The success of the UNESCO-CFIT project can be largely attributed to its implementation methods. In addition to a positive external evaluation, the broader successes of the project so far include:

1. Improved capacity of key teacher training institutes;
2. Improved pre-service teacher programmes;
3. Better continuous professional development support for in-service teachers;
4. Improved knowledge-sharing among policymakers, institutional leaders and other stakeholders;
5. Independence of in-country stakeholders to adapt to local and national needs and priorities. Countries were able to build synergies;
6. Close collaboration between in-country, local partners and UNESCO's field offices, in addition to increased networking of experts and educators, made the project more sustainable and fostered an exemplary model of cooperation.

These achievements would not have been possible in a more top-down, centrally-managed project implementation model. The UNESCO-CFIT model hence offers an example of effective South-South Cooperation – one that we believe could be replicated in other multi-partner and country-driven cooperative projects in support of developing countries.

The UNESCO-CFIT project is aligned with UNESCO's Priority Africa policy and its strategy on teachers and contributes to the Sustainable Development Goal 4 and Education 2030 Agenda.

Ten target countries

- Côte d'Ivoire
- Ethiopia
- Liberia
- Namibia
- Republic of Congo (Congo)
- United Republic of Tanzania
- Democratic Republic of the Congo (DR Congo)
- Togo
- Uganda
- Zambia

The UNESCO-CFIT project as a good model for South–South Cooperation

Thanks to the Government of the People's Republic of China, the UNESCO-CFIT project had an initial budget of US$8 million to promote the use of ICT as a way to enhance the capacities of TTIs in sub-Saharan Africa.

The project was implemented in phases. Initially, wit was launched in three countries and this produced some outstanding results. In fact, a positive evaluation of this first phase led the Government of the People's Republic of China to contribute an additional US$4 million – making it possible to roll out the project into the remaining target countries.

Whilst the project has been based on a set of common deliverables such as developing training modules, training provision, and delivering ICT equipment, each target country has been able to set their own priorities. This has provided each target country with the flexibility to design an approach that is well-aligned to their national and local needs.

The project is clearly linked to both global and regional education development priorities. Our approach has also ensured that national stakeholders are in charge of its implementation. In addition to providing flexibility to build on specific local needs, it has enabled local stakeholders to build synergies with other similar national or regional projects. This has introduced the potential to increase cooperation with internal in-country partners supporting different development projects, which would not have been possible in a more top-down, centrally-organized project model.

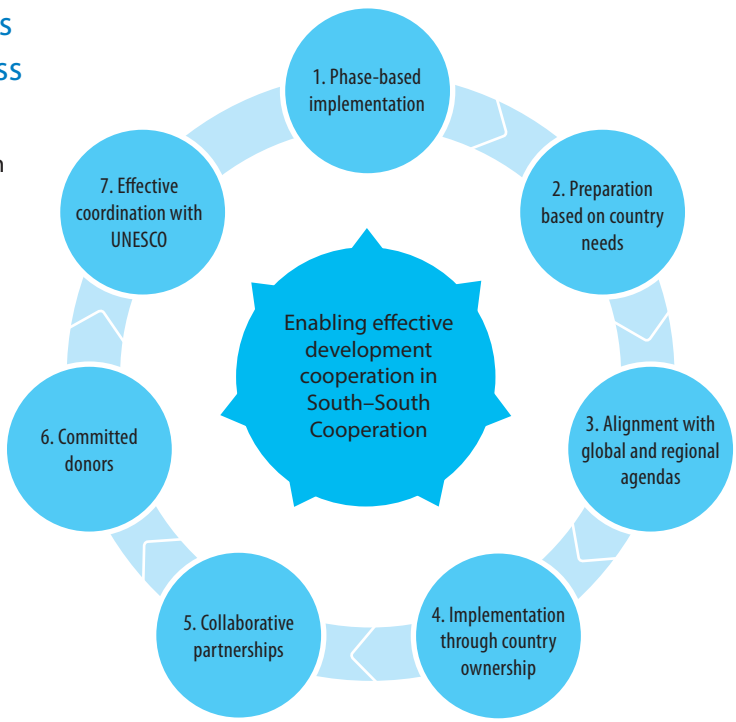
The UNESCO-CFIT project has provided a broad framework, while teams of national stakeholders have been able to ensure the implementation, coordination, supervision and monitoring of all the activities. Such a model also provides the incentives for the participating countries to remain committed and engaged (country ownership), enabling continuous adjustments whenever necessary to ensure full ongoing alignment with national priorities.

The result of this approach is that the project has successfully improved the capacities of the targeted TTIs, and in doing so enhanced the quality of pre-service and in-service teacher education. These positive findings show the potential of the UNESCO-CFIT project approach. As such, the UNESCO-CFIT model offers an example of effective South-South Cooperation – one that we believe can be replicated in other multi-partner and country-driven cooperative development projects.

> ***"UNESCO-CFIT widened our own horizons. We can now use material and deal with content that is not yet in the formal textbooks. Where we used to dictate in our lessons, we now use more interactive teaching methods."***
>
> *In-service teacher at Shimoni Core Primary Teacher College, Uganda*

The seven characteristics of UNESCO-CFIT's success

The project's success can be attributed to the implementation approach as described earlier, based on the seven key characteristics as follows.



Source: Authors

UNESCO-CFIT in Congo

Increasing access to digital pedagogical tools for teachers

In Congo, the UNESCO-CFIT project trained both teaching and non-teaching TTI staff in ICT skills, developed ICT training centres, and focused on capacity building of in-service teachers.

Key details:

- The project supported the development of pedagogical scenarios in mathematics, physics, natural sciences, French, and educational sciences. Scenarios were made available in an online learning portal with an e-library that brings together training materials and enables educational tools to be continuously updated;
- After the training, participants were more aware of the possibilities of ICT and developed their skills, knowledge and competencies to apply ICT in their own education activities;
- The country's Ministry of Higher Education is now building on the projects' success. In addition, the e-learning platform is used more broadly for a new teacher development programme.

Enhancing teacher education in Africa.

33 digital modules

on a variety of subjects such as mathematics, physics, natural sciences, French, and educational sciences have been developed

75 educational supervisors, 60 teacher trainers, 19 e-learning tutors and 500 teacher trainees

were trained in both ICT skills and using newly developed pedagogical tools

119 computers

were delivered to ICT training centres in

6 locations

Source: Country and external evaluation reports

Glossary

AFD	Agence Française de Développement
CFIT	China Funds-in-Trust
CPD	Continuous Professional Development
EFA	Education for All
ICT	Information Communication Technology
NGO	Non-Governmental Organization
PRC	People's Republic of China
SDGs	Sustainable Development Goals
TTI	Teacher Training Institution
UNESCO	United Nations Educational, Scientific and Cultural Organization
WB	World Bank

United Nations Educational, Scientific and Cultural Organization

UNESCO-China Funds-in-Trust

Improving the quality of teacher education in sub-Saharan Africa

Lessons learned from a UNESCO-China Funds-in-Trust project

Across sub-Saharan Africa, a shortage of well-trained teachers jeopardizes quality, inclusiveness and equity in education. The UNESCO-China Funds-in-Trust (CFIT) project was launched with the aim of addressing this issue, using information communication technology to improve the methods in teacher training institutes in countries across the region.

This booklet describes how the UNESCO-CFIT project started, the choice of beneficiary countries, the implementation strategies and its achievements.

Stay in touch

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4 QUALITY EDUCATION

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