GRÓ Geothermal Training Programme: Maintaining the Momentum of Geothermal Training for Africa

Ingimar G. Haraldsson and Gudni Axelsson

GRÓ Geothermal Training Programme
Orkustofnun, Grensásvegi 9, IS-108 Reykjavík
ICELAND

igh@grogtp.is, gax@grogtp.is

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ABSTRACT

In 2018, the United Nations University (UNU) and the Government of Iceland jointly concluded that the four training programmes operating under UNU in Iceland, including the Geothermal Training Programme (GTP), would benefit more from an alternative UN partner, due in large part to evolving priorities within UNU that were less well aligned with capacity building for developing countries than in earlier years. Consequently, a new governing structure was established for the four programmes. GRÓ – the International Centre for Capacity Development, Sustainable Use of Natural Resources and Societal Change – is a new institution operating within the Icelandic Ministry for Foreign Affairs as a UNESCO Category 2 Centre. GRÓ oversees and coordinates the operations of the four training programmes with respect to Icelandic policy on development cooperation and UNESCO strategy. GRÓ’s start of operations on January 1st 2020 coincided with the appointment of a new director of GTP. Dr. Gudni Axelsson has thus taken over from former Dir. Lúdvík S. Georgsson, who retired at the end of 2019. GTP is committed to continue offering high quality geothermal training for the developing countries, including partner countries in Africa. The operations are expected to carry on in much the same way as in earlier years, although some changes and adjustments will inevitably accompany the new organizational structure, the affiliation with UNESCO, and improvements facilitated by the new director together with GTP’s Studies Board and staff. These are all expected to enhance the programme further, for the benefit of partner countries.

1. Background

The United Nations University (UNU) was established by the UN General Assembly in late 1972 and launched its academic work in 1975 (UNU, 2020a). Interest in contributing to its operations arose early on within the Government of Iceland (Fridleifsson, 1998), as this UN institution provided a venue for focused development assistance in key Icelandic areas of expertise. Fisheries training and geothermal training were considered, with the latter coming out on top, partly due to the high oil prices of the late 1970s and the associated global interest in alternative energy sources. These deliberations resulted in the establishment of the United Nations University Geothermal Training Programme (UNU-GTP) in late 1978.

UNU-GTP was hosted by Orkustofnun – the National Energy Authority of Iceland (OS/NEA) and mostly financed by the Government of Iceland, as part of its Official Development
Assistance (ODA). The programme was founded on a trilateral agreement between UNU, the Icelandic Ministry for Foreign Affairs (MFA) and Orkustofnun.

Although GTP started out small (Georgsson, 2020), the programme grew to become a well-recognized part of Icelandic development cooperation. In 1998, the United Nations University Fisheries Training Programme (UNU-FTP) was established in Iceland with a similar structure to GTP. Two other programmes followed suit, each building on the experience of existing sister programmes: The Land Restoration Training Programme was piloted in 2007 and became part of UNU (UNU-LRT) in 2010 and the Gender Equality Studies and Training Programme was established in 2009, becoming a part of UNU (UNU-GEST) in 2013. Table 1 lists the four Icelandic training programmes operating under the United Nations University at the end of 2019.

Table 1: The four Icelandic training programmes operating under the United Nations University at the end of 2019

<table>
<thead>
<tr>
<th>Progr.</th>
<th>Focus</th>
<th>Est.</th>
<th>Host institution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTP</td>
<td>Geothermal training</td>
<td>1978</td>
<td>National Energy Authority of Iceland</td>
</tr>
<tr>
<td>FTP</td>
<td>Fisheries training</td>
<td>1998</td>
<td>Marine and Freshwater Research Institute</td>
</tr>
<tr>
<td>LRT</td>
<td>Land restoration training</td>
<td>2007</td>
<td>Agricultural University of Iceland Soil Conservation Service of Iceland</td>
</tr>
<tr>
<td>GEST</td>
<td>Gender equality studies and training</td>
<td>2009</td>
<td>University of Iceland</td>
</tr>
</tbody>
</table>

The four programmes have been operated within their host institutions as UNU programmes, financed by the Icelandic Ministry for Foreign Affairs. All build on expertise which has accumulated in Iceland within the last century or so.

2. Changes take shape

Paragraph 1 of Article I of the Charter of the United Nations University, adopted by the UN General Assembly at its 28th session in 1973, states that (UNU, 2020b; highlighting by the authors):

*The United Nations University shall be an international community of scholars, engaged in research, postgraduate training and dissemination of knowledge in furtherance of the purposes and principles of the Charter of the United Nations. In achieving its stated objectives, it shall function under the joint sponsorship of the United Nations and the United Nations Educational, Scientific and Cultural Organization (hereinafter referred to as “UNESCO”), through a central programming and coordinating body and a network of research and postgraduate training centres and programmes located in the developed and developing countries.*

Postgraduate training, which has been at the core of the four Icelandic programmes, was thus an important part of the mission of the UNU at the outset and for most of its history. However, recent years have seen an increased focus on policy research within UNU, as covered in its strategic plans (UNU, 2014; 2019). At the same time, the emphasis on capacity building and postgraduate training has diminished. In light of these developments, and the desire for continued emphasis on these key aspects within the Icelandic programmes, it was mutually agreed between the parties that the programmes would likely benefit more from an association with a different UN entity, with which their operations would be better aligned.
Discussions between the Icelandic Ministry for Foreign Affairs on behalf of the Icelandic programmes, and the United Nations Educational, Scientific and Cultural Organization (UNESCO) were initiated in 2018 to explore possible association, synergies and complimentary aspects of operations. One possibility that emerged was the establishment of a multi-disciplinary Category 2 Centre in Iceland under the auspices of UNESCO, within which the four programmes would be operated.

Category 2 Institutes and Centres under the auspices of UNESCO are independent institutions of excellence in the organization’s domains of competence that contribute to the implementation of UNESCO’s strategic priorities, programmes, and global development agendas, through international and regional cooperation, research, knowledge production, policy advice, and capacity development (UNESCO, 2019a). They are privileged partners of UNESCO with access to the organization’s logo and international and intergovernmental bodies and networks, which may leverage UNESCO’s international reach and convening powers (UNESCO, 2019a).

In March 2019, the Government of Iceland submitted a formal request to the Director General of UNESCO to initiate all necessary steps for the establishment of a multidisciplinary Category 2 Centre (UNESCO, 2019b). At its 40th session in November 2019, the General Conference of UNESCO approved the establishment of the International Centre for Capacity Development – Sustainable Use of Natural Resources and Societal Change as a Category 2 Centre under the auspices of UNESCO in Reykjavík, Iceland (UNESCO, 2020). The UNU was supportive of this process throughout.

In December 2019, the Ministry for Foreign Affairs published regulation 1260/2019, establishing a legal entity to assume the role and responsibilities of the proposed centre. The name of this entity, which operates independently under the ministry, is GRÓ. In Icelandic, the name has the literal meaning of seed or spore, while the pronunciation is similar to the English verb to grow (the two have a common origin). The name is intended to be short and memorable, while alluding to the centre’s emphasis on future evolution and growth.

3. GRÓ – the International Centre for Capacity Development, Sustainable Use of Natural Resources and Societal Change

GRÓ started operations on January 1st, 2020, as the four programmes’ long-standing ties with UNU were severed. The programmes were thus brought under a single centre in Iceland under the auspices of UNESCO (Figure 1).

The overall objective of GRÓ is to convey knowledge and know-how, within fields where Icelandic expertise is particularly relevant, to developing countries through capacity building. The centre builds on a multi-disciplinary and integrated approach to support capacity development of individuals and organizations in developing countries. The specific aims of the centre are encapsulated in the operations of its four programmes and

Figure 1: The GRÓ logo.
the corresponding UN Sustainable Development Goals (SDGs). The objectives are to promote …:

- gender balance, social justice and peace building,
  - Mainly overseen by GEST, but also promoted by the other programmes.
  - Supporting SDG 5 (gender equality) and SDG 16 (peace, justice and strong institutions).
- the utilization of geothermal energy,
  - Overseen by GTP.
  - Supporting SDG 7 (affordable and clean energy).
- the protection and sustainable utilization of aquatic life (oceans and lakes), and
  - Overseen by FTP.
  - Supporting SDG 14 (life below water).
- the restoration and sustainable utilization of land.
  - Overseen by LRT.
  - Supporting SDG 15 (life on land).

GRÓ’s core operations are coordinated with Icelandic policy on development cooperation and UNESCO strategy, being financed by Icelandic Official Development Assistance, channelled through the Ministry for Foreign Affairs.

GRÓ’s board consists of 5 members appointed to 6 year terms. These represent the Icelandic Ministry for Foreign Affairs (chair), the Icelandic Ministry of Education, Science and Culture, UNESCO (appointed by the Director General), the UNESCO national committee in Iceland, and the Icelandic parliamentary development cooperation committee. Daily operations of GRÓ are overseen by a director general, who also has a leading role in coordinating the activities of the four training programmes and liaising with their respective directors.

GRÓ achieves its goals by utilizing the following strategies and programme components, albeit with some variation between the programmes (GRÓ, in preparation):

- Post-graduate training programmes, such as the 6-month training operated by GTP in Iceland since the programme’s inception (Georgsson, 2020).
- Support to former 6-month fellows to pursue advanced degrees at Icelandic universities, as exemplified by GTP fellowships for MSc / PhD studies (Georgsson, 2020).
- Short courses and tailored training (Haraldsson, 2018).
- Platforms for knowledge exchange and dialogue. These can be conferences, symposia, and workshops organized by others, which are relevant to the work of the programmes and can be used as venues to disseminate their research, elevate their profile and/or engage with specific groups, or similar activities organized by GRÓ and/or UNESCO.
- Networking. Alumni will be encouraged to establish networks for knowledge exchange, organizing events, advocate SDGs etc. These can be bolstered by events organized and implemented by UNESCO, GRÓ and others, nurtured by connections to existing UNESCO networks, and maintained through social media platforms, e-mail lists and other means.
- Research and knowledge creation, particularly through research projects of GRÓ fellows, whether at the level of post-graduate training programmes or advanced university studies. The aim is to bring to light new knowledge meeting specific needs
within areas of concern to the programmes within partner countries. Research will be published on GRÖ’s open web platforms, accessible to the global geothermal community, students, scientists etc., and publications in peer-reviewed journals will be encouraged.

- Advisory services and knowledge sharing. In addition to the core capacity building activities of GRÖ, other projects are undertaken on a case-by-case basis. These projects include advisory, consultancy, and research services performed by GRÖ programme staff, partners, and former fellows. This includes training needs assessments for partner organizations, evaluation of development projects, support to partner organizations’ project implementation, research related to one of GRÖs core areas, consultancy on the design of capacity development curricula, serving on expert panels for UNESCO entities and others, etc.

- Gender sensitive and equality promoting approaches. GRÖ is committed to the promotion of gender equality in all its activities.

The four programmes will build on the strong foundations of earlier years, with core operations maintained.

4. GRÖ Geothermal Training Programme (GRÖ GTP)

The establishment of GRÖ coincided with a change of directors at GTP. Former Dir. Lúdvík S. Georgsson retired at the end of 2019, with Dr. Gudni Axelsson taking over at the beginning of 2020 (Figure 2). Dir. Gudni has a PhD in geophysics from Oregon State University, United States, and has worked as a reservoir physicist at Orkustofnun and ÍSOR (Iceland GeoSurvey) prior to his present post. He has been heavily involved in geothermal education all his career, most significantly through GTP as lecturer and student advisor, but also through the main universities in Iceland. He is thus well positioned to lead GRÖ GTP in its new era under the auspices of UNESCO (Figure 3).

The operations of GTP are expected to continue in much the same way as in earlier years, although some changes and adjustments will inevitably accompany the new organizational structure, the affiliation with UNESCO, and improvements facilitated by the new director together with GTP’s Studies Board and staff. These are all expected to enhance the programme further, for the benefit of partner countries.

As in other parts of the world, COVID 19 has had a great impact on Icelandic society and for the first time in GTP’s history, the 6-month training was cancelled in 2020. The hope is to run the training with a larger number of fellows in 2021 with an overhauled and improved set-up in accordance with the outcome of current review. Unfortunately, SDG short
courses in Kenya and El Salvador, which GTP has organized jointly with local partners on a regular basis since 2005 (Georgsson, 2020), had to be cancelled. The same applies to a Geothermal Diploma Course for Latin America, which has been offered since 2016 with the support of GTP. COVID has affected numerous other facets of the operations. On the bright side, GTP was able to bring all recipients of fellowships for advanced studies to Iceland, allowing 5 former GTP fellows to commence their Master’s studies (including 2 from Africa) and 1 to start PhD studies.

As other academic institutions, GTP has utilized web-based connections for meetings and training through the COVID pandemic and it is likely that some of the lessons learned will be incorporated into future operations of the programme, as remote connections can complement the more traditional physical aspects of training and lead to efficiency gains, both in terms of time and funds. In this regard, it is important to identify the right mix of in-person and remote training, as practical and on-the-job work will continue to play an essential role in geothermal training.

In spite of these varied external and internal changes, GTP’s core programme components are expected to remain in place as shown in Figure 4.

![Diagram of GRÓ GTP organization](image)

**Figure 4: Organization of GRÓ GTP.** MFA: Ministry for Foreign Affairs; NEA: Orkustofnun – National Energy Authority.

5. **Cooperation with Africa**

Throughout its history, and particularly in recent years, GTP has placed great emphasis on cooperation with African countries. This is discussed in detail by Georgsson (2020) at this conference. A total of 281 African fellows have completed the 6-month training (out of a total of 718 6-month GTP fellows) with almost half of those having come from Kenya (134). Large groups from Ethiopia, Djibouti, Tanzania and Uganda have also been trained. A great number of students from countries in Africa have also pursued advanced degrees at Icelandic universities with the support of GTP. This includes 46 MSc fellows from Africa (60% of all MSc fellows) and 7 PhD fellows. The first two to graduate with PhD degrees were ladies
from Kenya, graduating in 2013 and 2016, respectively. The GTP is extremely proud of these two, as gender equality has always been at the heart of its operations.

The UN Millennium Short Course series offered by GTP in Kenya, in cooperation with local organizations, during 2005-2015, as well as the comparable UN Sustainable Development Goals Short Course Series starting in 2016, have been a valuable addition to the training activities of GTP provided for African countries with geothermal resources (Georgsson, 2020). This has allowed GTP to reach out to a larger target-group than through the training offered in Iceland. During the 15 years of operation about 745 individuals have participated in these courses. Finally, GTP has organized customer-designed short courses and training in E-Africa with 44 such events having taken place during 2010-2019.

During the last decade, geothermal development has really taken off in E-Africa. Kenya, which had 865 MWe installed geothermal capacity at the end of 2019 and new geothermal power projects under development, is now one of the world leaders in geothermal power generation. Development is also speeding up in Ethiopia and Tanzania, to name further examples. GRÓ GTP greatly values the cooperation with African partners and is committed to continued support of geothermal development in Africa. The variable training referred to above along with its outcome, is a strong foundation for the new GRÓ GTP to build on for its future operations aimed at supporting further geothermal development in Africa.

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