



United Nations  
Educational, Scientific and  
Cultural Organization

UNEVOC

International Centre  
for Technical and Vocational  
Education and Training



PROMISING  
PRACTICES



# Campos dos Goytacazes Innovation Hub

UNESCO-UNEVOC Promising Practice in Focus 2019

## Context

### The Brazilian Federal Government recognizes the important role of Technical and Vocational Education and Training (TVET) in national development

In 2011, the Brazilian Federal Government launched the National Programme for Access to Technical Education and Employment (PRONATEC) with the aim of offering training to the most vulnerable groups and facilitating their transition into the job market<sup>1</sup>. The Bolsa Formação (BF) is the main financing mechanism within the PRONATEC programme, aimed at promoting social inclusion. The main focus is on providing free training to vulnerable segments of the population who were previously unable to afford TVET<sup>2</sup>.

Due to the implementation of the PRONATEC programme, TVET has gained considerable visibility in Brazil. However, as the programme is scaled back, underlying issues remain. TVET enrollment rates in Brazil continue to lag behind those of other OECD countries. In 2016, only 9% of upper secondary students in Brazil were enrolled in vocational education, considerably below the OECD average of 44%.<sup>3</sup>

### TVET offers a pathway to inclusion for rural youth

Inequalities persist in Brazilian society, particularly amongst the rural population. These inequalities have resulted in the educational exclusion of a considerable number of young people. TVET in Brazil plays a vital role in the social inclusion of poor and marginalized youth, by facilitating their entry into the labour market. Studies show that graduates of one of the country's formal apprenticeship programmes have a greater likelihood of finding permanent, higher-paying jobs<sup>4</sup>. Furthermore, workers with upper secondary TVET earn wages about 10 percent higher than those with only a general secondary education.

In rural areas of the country, there is also the challenge of matching productivity to meet increased demand. Productivity has been hindered by a lack of relevant knowledge and skills, but also a lack of appropriate technologies. Family farming is still characterized by low economic dynamism and a high incidence of poverty<sup>5</sup>. As financial resources are limited, the TVET sector recognizes the need for low-cost, innovative solutions to tackle the current problems<sup>6</sup>.

## Overview

**Implemented by:** Campos dos Goytacazes Innovation Hub (PICG), part of the Federal Fluminense Institute of Education, Science and Technology, and in coordination with the Brazilian Agency for Industrial Research and Innovation (EMBRAPII)

**Where:** Campos dos Goytacazes, Brazil

**Themes:** Youth employment; Work-based learning

**Funding:** 1/3 EMBRAPII Funded, 2/3 PICG & Partner

**Status:** Active since 2015

Access to technical and higher education along with skills development programmes have become important tools to tackle poverty in Brazil. By recognizing that innovation takes place at the forefront of learning, PICG enables its students to develop creative practical solutions utilizing science and technology.

Student-led projects range from partnerships with low-income communities to the development of innovation projects with engineering companies. The technology that students develop with private sector companies allows the application of low-cost solutions that benefit rural communities.



1 UNESCO GEFI Champion Countries, <http://www.unesco.org/new/en/gefi/partnerships/gefi-champion-countries/brazil/>

2 TVET Country Profile - Brazil, UNESCO-UNEVOC, 2018

3 Brazil-Country Note-Education at a Glance 2018: OECD Indicators <http://gpseducation.oecd.org/Content/EAGCountryNotes/BRA.pdf>

4 World Development Report 2018: 'Learning to Realize Education's Promise', The World Bank, <http://www.worldbank.org/en/publication/wdr2018>

5 Ibid.

6 IFAD Country Profiles, Brazil <https://www.ifad.org/web/operations/country/id/brazil>



## The initiative and its impact

### Goal of the initiative

The main objective of PICG is the development of low-cost technological solutions aimed at addressing environmental problems. The innovation hub aims to empower local communities with suitable technology that can help farmers to become more productive and provide a pathway to Master's or PhD programmes for vocational students.

### Description of the initiative

#### *Greening the campus*

- PICG has implemented a research and development programme that will create a model campus run on 100% renewable energy.

#### *Involvement of students across all faculties*

- Students from all academic backgrounds are jointly involved in projects, from Vocational to Master's level, from the faculties of Electronics and Informatics, to Environmental Science and Automation.

#### *Projects rooted in real-life issues with concrete outcomes*

- Projects range from partnerships with low-income community groups, such as small-scale family farmers, to the development of innovative industrial projects with engineering companies.

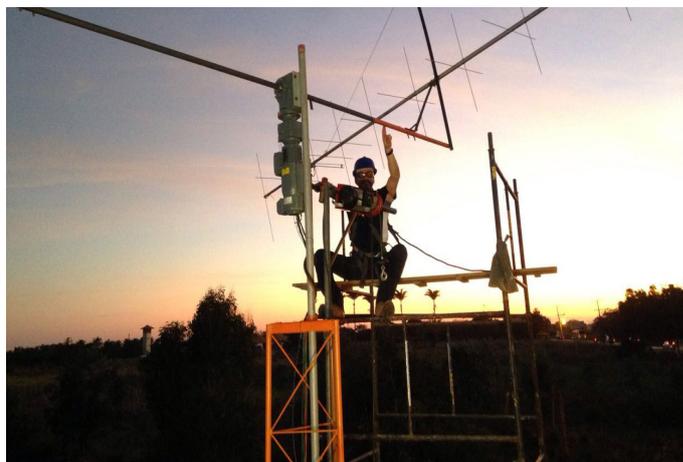
#### *Providing training to vulnerable women*

- As part of a government initiative to facilitate the social inclusion of vulnerable women, PICG has to date provided free micro-credentials training to 130 women.



The Campos dos Goytacazes Innovation Hub (PICG) is supported by the Brazilian Agency for Industrial Research and Innovation (EMBRAPPII). PICG is a campus of the Federal Fluminense Institute of Education, Science and Technology (IFF) and one of nine innovation hubs established in Brazil since 2015.

All of the innovation hubs are accredited to work in specific areas of expertise. In the case of PICG, the focus area is the development of clean production technologies. They achieve this mandate through collaboration with private sector entities, and by engaging in research, development, and innovation activities. In addition, PICG collaborates with IFF on measures to stimulate the regional economy.



### Impact of the initiative

#### *Image of TVET:*

- The use of technology created by TVET-qualified experts increases the visibility and marketability of TVET.
- The development of applied research projects promotes collaboration and knowledge sharing between different TVET institutions.

#### *Environmental Technology:*

- Student-developed environmental technology is currently

being utilized by 25 companies in the state of Rio de Janeiro and neighbouring states, as well as communities in the region.

*Students:*

- After graduation, students gain employment with regional companies, create their own hi-tech start-ups, or go on to the next level of study at PICG.

*Farming Community:*

- Through courses in organic horticulture, farmers and fishers in local communities increase their productivity. They gain the necessary knowledge and skills to run their land more efficiently, whilst increasing their farming income.

As of December 2018, approximately 575 people were directly trained in the specific areas of activity within 3.5 years of operation.

## Insights

### Learning from other Innovation Hubs

Partnerships with other innovation hubs plays a fundamental role in PICG's success. The directors of the nine national innovation hubs maintain frequent contact and share information on management experiences, as well as prospective collaborative projects.

### Private sector engagement

Private sector engagement, via strategic partnerships and investment, contributes to the programme's continuity. A coordinator from PICG regularly liaises with companies for project involvement. Listening to companies, understanding their demands, and responding with innovative solutions are key aspects of the relationship.

### Collaboration with the local community

Dialogue with the community increases the possibility of finding innovative, practical, and inexpensive solutions to the issues at hand. For each project, a considerable amount of time is spent laying the groundwork in terms of teaching the basics to the community, identifying leaders and local socio-economic tendencies, and developing the cultural intelligence of the project team to develop contextual solutions.

## Learn more

**Prof. Rogerio Atem Carvalho**, Director of PICG, helped to compile this document. For more information about PICG, please contact him at [ratem@iff.edu.br](mailto:ratem@iff.edu.br).

The National Council of the Federal Network of Vocational, Scientific and Technological Education (CONIF) is a UNEVOC Centre in Brazil that assembles the group of thirty-eight federal institutions of vocational, scientific and technological education across the country. Conif promotes innovative initiatives in the TVET sector, such as the ones implemented by PICG. For more information about Conif, please visit <http://portal.conif.org.br/en/>.

## Discover other promising practices

The UNESCO-UNEVOC Promising Practices database presents inspiring projects tackling key themes in TVET, such as Gender equality, Youth employment, Greening, Digitalization and more.

Learn more on our website at:

<http://www.unevoc.unesco.org/promisingpractices>

Questions or suggestions? Contact our team at:

[unevoc-pp@unesco.org](mailto:unevoc-pp@unesco.org)

## Looking to the Future

Since its creation, graduates of PICG have increased from approximately 80 to 170 per year. In the future, PICG will continue to support other campuses during the programme's expansion. Currently, PICG is viewed as a model campus and assists in the establishment of other innovation hubs in the network.

In the regions designated as Brazil's new agricultural frontiers, PICG has started to engage in partnerships within the production sector, whilst seeking out international collaboration opportunities to increase its global scope.

