Brochure

Integration of DRR and CCA into Universities

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Cooperación Suiza
en América Central

Sendai Framework for Disaster Risk Reduction 2015-2030
Priority 1: Understanding disaster risk.

The ***Disaster Risk Reduction Programme (DRR Programme)*** is one of SDC's most emblematic achievements in Central America. It began in 1999 in the wake of Hurricane Mitch with projects in Honduras and Nicaragua, was later expanded to include El Salvador and, finally, the entire Central American region. More than 1.5 million persons benefitted directly and at least 19 million did so indirectly. With participation from a variety of partners, almost seventy projects were implemented from 1999 to 2024. These were structured along six **thematic lines:**

- **Natural hazard mapping and local risk management**
- **Early Warning Systems**
- **Integration of DRR and CCA into universities**
- **Construction of safer housing and infrastructure**
- **Strengthening of national and regional DRR systems**
- **Incorporation of DRR and CCA in other SDC projects**

Under the thematic line *Integration of Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) into universities*, ten bilateral and regional projects were carried out. They were allocated 14% of the total budget, equivalent to a little over CHF 6 million. Some of the projects involved specialised education – post-graduate courses or master's degree programmes – while others dealt with DRR and CCA in regular university activities. At the outset, this thematic line focused on integrated disaster management. Later on, climate change was added to the approach. The Nicaraguan experience was replicated by the 23 universities member of the Central American Higher Education Council (CSUCA) and two private universities.

The Swiss Agency for Development and Cooperation (SDC) decided that this thematic line was strategic because universities play an important line in development. This is where specialised knowledge is generated and professionals educated who are destined to become decision-makers. In addition, considering their proximity and direct work with young people, they have a significant potential to promote changes in attitudes and consolidate a culture of prevention.

Impact hypothesis

Professional public and private university graduates educated in DRR and CCA acquire competences and knowledge they can later apply in their careers, for instance by fostering the development of regulatory frameworks favourable to DRR and CCA, design and build more resistant infrastructure intended to reduce losses and damages caused by disasters, and improve the resilience of the various strategic sectors of the economy.

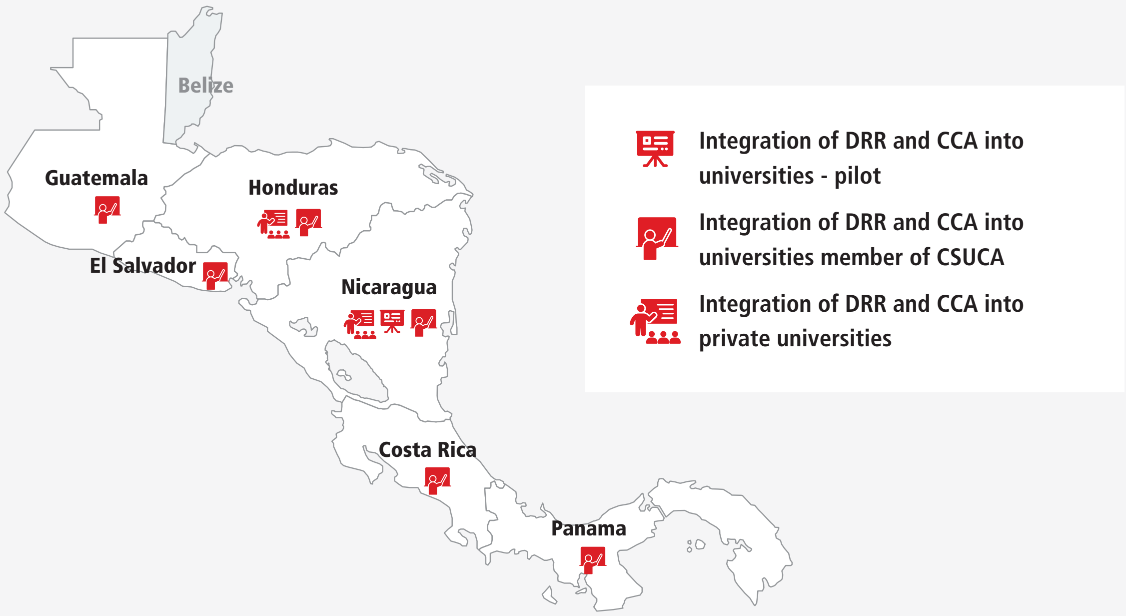
Main projects

Support to the creation of a DRR reference centre at the Multidisciplinary Regional Department (FAREM) in Estelí. Nicaragua. Implementing agency: FAREM-UNAN Managua. Single phase: 2009-2013. SDC contribution: CHF 482,000.

Integration of risk management and climate change to universities in Central America. Regional. Implementing Agency: CSUCA and the Coordination Centre for Disaster Prevention in Central America and the Dominican Republic (CEPREDENAC). Three stages: 2013-2016 (CSUCA); 2017-2018 (CSUCA); and 2018-2021 (CEPREDENAC). SDC contribution: CHF 3.7 million.

Strengthening Environmental Management in CCA and DRR at Zamorano University. Honduras. Implementing Agency: Zamorano University. Single phase: 2014-2017. SDC contribution: CHF 455,000.

DRR and CCA projects at universities



Objective

To educate specialists and develop capacities among teachers and students, as well as methodologies and tools by which to integrate and institutionalise DRR and CCA in the regular education curricula of participating universities, thus contributing to reducing risk and damages to critical infrastructure.

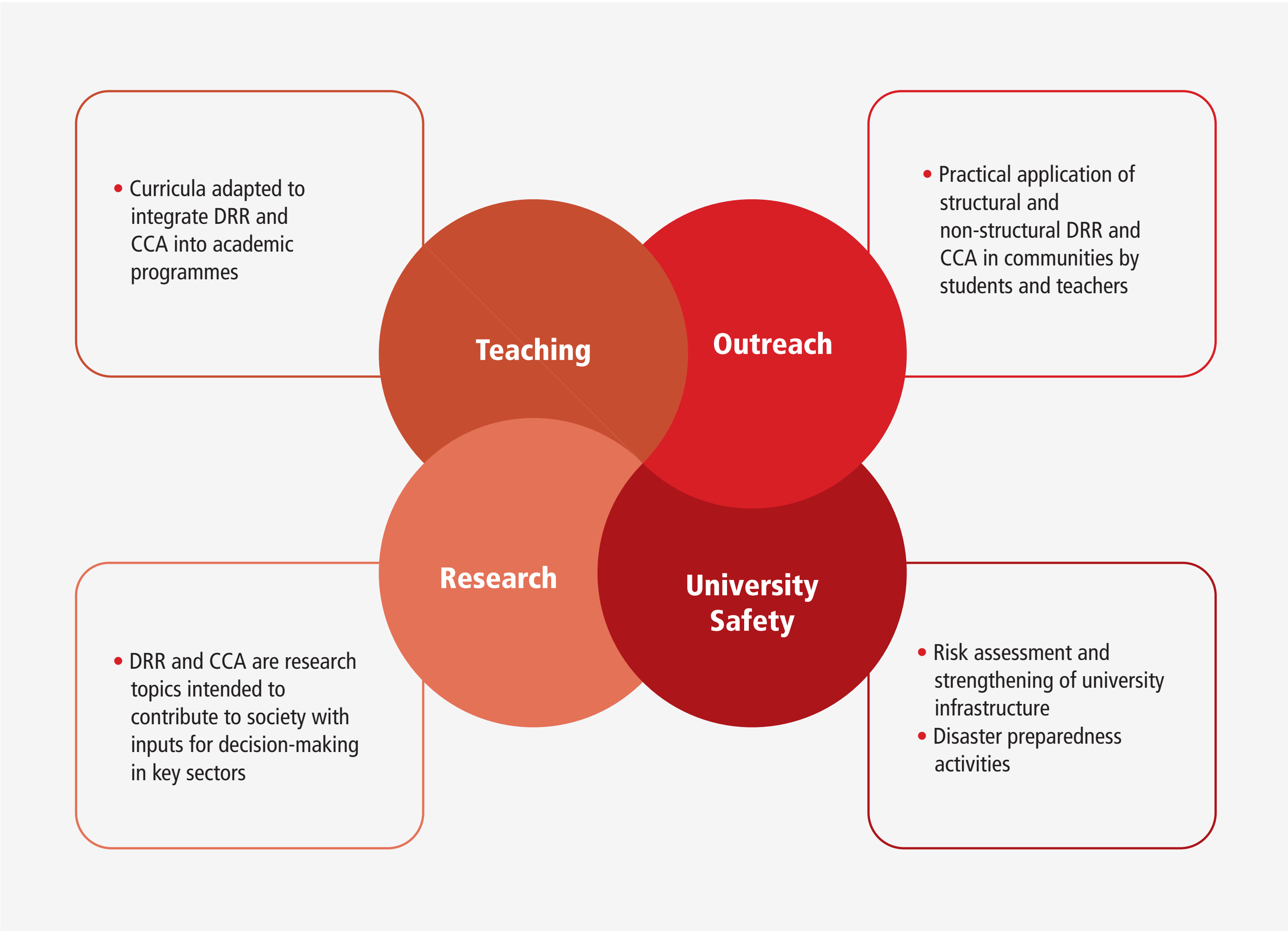
Swiss added value

Scientific and thematic enrichment of academic programmes, with the participation of universities and Swiss experts, who transferred their knowledge, methodologies and know-how acquired in Switzerland and elsewhere to teachers and students in Central America.

Innovation

This thematic line generated outputs unique in Latin America, among them the approval of the *Central American University Policy for Disaster Risk Reduction (PUCARRD)*; guides by which to integrate DRR and CCA as quality criteria for the accreditation of academic programmes; a self-evaluation guide to determine the degree of incorporation achieved by PUCARRD; and methodological guidelines to include DRR and CCA to public universities. It is worth highlighting an Early Warning System for floods keyed toward persons with visual and auditory disabilities, developed by teachers and students at the Technological University of Panama.[1]

The integration of DRR and CCA took place in four strategic areas:



[1] Technological University of Panama https://www.youtube.com/watch

Students learn to analyse risk as part of their education at the National Autonomous University of Nicaragua (UNAN-Managua). © SDC

The Central American Higher Education Council (CSUCA), taking into account the experience acquired at public universities, formulated a set of methodological guidelines, with a description of steps for updating university study curricula by integrating DRR and CCA as a cross-cutting issue or specific module. In the fields of outreach and research, the aforementioned methodological guidelines recommend that the universities incorporate DRR and CCA thematic lines to their research agendas. This would allow for allocating a budget and, as concerns the students, link theory (classroom) to practical experience acquired by means of university outreach. In the field named university safety, these guidelines recommend integrating these approaches to the administrative area, and in particular, to Occupational Health and Safety.

Stages

The three stages described below deal with projects focused on integrating DRR and CCA into university curricula. These take as a reference the aforementioned methodological guidelines, as well as the experience with other projects carried out on the subject:

Stage 1

Diagnostic and methodology (1 to 2 years)

Objective: To identify capacities and gaps in topics related to DRR and CCA, and define methodologies for adapting the curricula.

Main activities:

- Establish institutional commitment.
- Form a multidisciplinary team of teachers and academic authorities.
- Undertake a diagnostic.
- Identify implementation modalities for the various processes. In the case of regional projects involving several universities, it may be possible to use competitive funds to select the initiatives to be carried out.
- Identify majors and academic programmes to which DRR and CCA can be integrated, focusing on those majors that are linked to the sectors most vulnerable vis-à-vis disasters, namely civil engineering (road infrastructure, water and sanitation), agriculture and the environment, among others.

- Work to raise awareness in the education community.
- Undertake general and specialised training for teachers working in selected majors and programmes.
- Develop or adjust the curricula adaptation methodology so as to integrate DRR and CCA.
- Define the modality to be used: cross-cutting,[2] specific courses, or both.

Stage 2
Application and validation (2 years)

Objective: Apply the methodological proposal to selected academic programmes, identify and make the needed adjustments.

Main activities:
- Integrate DRR and CCA to the selected academic programmes.
- Develop the necessary contents and use in the courses or modules.
- Prepare a follow-up and evaluation plan regarding the quality of the knowledge and contents being transferred.
- Validate the adjusted academic programmes among students (teaching, outreach and research).
- Monitor learning by students.
- Monitor the quality of the transmission of knowledge and content by teachers.
- Carry out self-evaluations (apply the PUCARRD guide) or peer evaluations (with other departments and universities).
- Identify and make the pertinent adjustments to academic programmes and courses.

Stage 3
Institutionalisation and scaling (permanent)

Objective: Ensure that the academic programmes integrate DRR and CCA to the university academic offer and institutionalise these via the university councils. In addition, scale the experience to other departments at participating or other CSUCA universities.

Main activities:
- Present the new programmes to academic authorities for review.
- Approve the adjusted academic programme and courses by means of resolutions or any other instrument used at the university.
- Continuously integrate the topic of DRR and CCA to the study plans.
- Accredit the majors with the pertinent national or regional accreditation bodies, such as, for instance, the Central American Architecture and Engineering Programme Accreditation Agency (ACAAI).
- Continuously monitor and evaluate the quality of teaching.
- Design and apply follow-up mechanisms regarding graduates, in order to know the degree to which the knowledge acquired is being applied.
- Mobilise financial and human resources to expand or scale the new majors, curricula or departments.
- Replicate stages 1 and 2.

[2] This implies making an issue visible and analysing how to incorporate it to the various academic courses and programmes.

Sustainability

Sustainability is considered to be high, since it proved possible to institutionalise the integration of DRR and CCA by means of PUCARRD's higher education regional integration plan for Central America and the Dominican Republic, as well as university policy. Furthermore, the instruments approved, such as the Accreditation Manual for the Green Quality Seal in Integrated Disaster Risk Management (IDRM) and CCA are being used systematically at the universities. Finally, there is now a critical mass of trained teachers who continue to develop contents and teaching DRR and CCA courses at the universities.

Resources

It is necessary to establish multidisciplinary working teams made up of teachers from the various academic programmes to be intervened, in addition to experts in pedagogy, curricula and key authorities, in order to promote these processes at each of the universities. There must also be a person to coordinate and lead the process. **Reference cost:** CHF 150,000 – 600,000 per annum (costs for regional projects are higher).

Implementation options

These projects must be implemented by the interested universities through the modality of contributions, as a way to further more active taking of ownership.

Success factors

1. The development of a standard methodology for curricula adjustment, prepared in a participatory manner, piloted and adaptable to different university contexts.
2. The achievement at FAREM-UNAN in Estelí and UNAN-Managua as they integrated DRR and CCA proved the validity of the methodology and generated multiplier effects when organising courses for other groups, such as secondary and primary school teachers, communities and local governments. In addition, it motivated other public and private universities in the region to replicate the experience.
3. The approval of PUCARRD by top public university authorities who are members of CSUCA opened the door for the approval of specific university policies that allowed for institutionalising the integration of DRR and CCA to four strategic areas (teaching, research, outreach and university safety).
4. The strategy of including DRR and CCA as one of the criteria for quality at national and regional accreditation agencies, and the approval of manuals and self-evaluation guides, promotes stronger taking of ownership and bolsters sustainability.
5. The low turnover rate of teaching staff at public universities in Central America. This ensures the permanence of a critical mass of teachers trained in DRR and CCA and makes for the continuity of teaching, research and outreach.

Students of the Master's Programme in Risk Evaluation at the Geology and Geophysics Institute (IGG-CIGEO), UNAN-Managua during field practice © SDC

Main challenges and lessons learnt (LL)

1. The mechanism and process by which university initiatives are selected, namely a competitive fund, turned out to be a challenge because of its regional scope, the large number of initiatives presented (60), as well as the limited human and financial resources available for the monitoring and technical accompaniment to the universities. In addition, the endorsements requested as part of the competition were not always approved by the top authorities, which delayed institutionalisation.

   LL: The integration of DRR and CCA into the universities must be based on the commitment and formal acceptance by the highest authorities at each university. The selection mechanism must define the roles of every entity and the resources needed for implementation and follow-up.

2. Universities with little experience in managing funds coming from international cooperation sometimes lack the mechanisms needed for funds management and accountability.

   LL: The projects must include training in funds management and accountability, as well as in how to monitor international cooperation funds, in order to strengthen capacities at the universities and ensure better project implementation.

3. Universities that don't have mechanisms by which to monitor the application of DRR and CCA knowledge among teachers and students, or ways in which to control the quality of knowledge transfer.

   LL: A good monitoring plan must be in place from the project planning stage, with indicators, goals and clearcut responsibilities, including quality control criteria regarding knowledge transfer.

4. Low levels of coordination with risk management and civil protection systems in the individual countries and the region at large made it difficult to align with national policies, methodologies and priorities.

   LL: From the onset of project planning, the universities must involve the risk management and civil protection systems in order to ensure there is technical accompaniment and coherence with the policies, methodologies and approaches the various systems promote.

Students in a risk management diploma course, National Autonomous University of Honduras (UNAH). © UNAH

Good practices

1. The systematic peer evaluations and exchanges of experiences undertaken by CSUCA between the 25 public and private universities contributed to learning, replication and adoption of good practices among the universities.
2. For purposes of approving the national and regional instruments that were developed in a timely manner, followed by their institutionalisation, it is important to make use of organisational structures already existing at the universities and CSUCA, such as for example, the Regional Academic Majors and Postgraduate Courses System (SICAR) and the Central American Higher Education Evaluation and Accreditation System (SICEVAES).
3. There are regional policy instruments and technical guides in place that can be used as references at the universities to develop and institutionalise their own DRR and CCA integration procedures.
4. Having consortia of universities from the various countries that work together on developing ways to adjust curricula in selected academic majors programmes. An example of this is civil engineering, where horizontal learning was increased, interuniversity cooperation promoted and a contribution made to regional integration in the field of academe.

> “At the Central American Higher Education Council (CSUCA) we educated, trained and raised awareness among the university community, then got the students involved. Our future decision-makers are at the universities, which is why it is very important to sensitise them to the need for disaster risk reduction and climate change adaptation studies at the universities”.
>
> **Carlos Guillermo Alvarado Cerezo**, secretary general of CSUCA, 2022-2026, Guatemala

Information and contacts

Thematic Network on Climate, DRR and the Environment
climate.drr.env.newsletter@eda.admin.ch
André Wehrli: andre.wehrli@eda.admin.ch
Jacqueline Schmid: jacqueline.schmid@eda.admin.ch
Ali Neumann: ali.neumann@eda.admin.ch
www.shareweb.ch/site/disasterriskreduction/
www.weadapt.org/knowledge-base/sdc-network-climate-drr-and-environment

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Cooperación Suiza en América Central