

Building Sustainable Societies in Asia-Pacific

With more than 25 years of continuous presence across the region, applying integrated and innovative approaches, NIRAS has helped facilitate Asia-Pacific's journey towards inclusive prosperity and a sustainable future.

> wned by a foundation, the NIRAS Group is an international multidisciplinary consultancy firm with Nordic roots and values. We design, implement, and manage projects and investments that bolster economic development, enhance livelihoods, reduce inequality, improve education and health, and build environmental resilience. Our vision is twofold: to be the partner of choice for our clients and the employer of choice for professionals with the know-how and drive to help fulfil our mission. To date, we have delivered over 2,000 development assistance projects in over 100 countries across the globe, including 26 countries in the Asia-Pacific region.

An economic powerhouse

In the last 50 years, Asia-Pacific has recorded extraordinary economic growth and poverty reduction, and today the region represents well over 30% of global GDP. Despite risks on a global scale, Asia-Pacific is set to continue on this path of growth. Yet pockets of

poverty and vulnerability, rising inequality, climate change impact, environmental degradation, and large infrastructure deficits remain and must be addressed. Mega-trends in urbanisation, technological advancements, and changing demographics present many opportunities but also challenges.

Given its size and that Asia-Pacific today generates well over 30% of global GDP, achievement of the SDGs will depend on the region's progress.

Where should the focus be?

Infrastructure and trade will continue to underpin social and economic development, and integrated, cross-border initiatives are needed to tackle major challenges. But to truly make an impact, quality investment in infrastructure and economic growth must be green, sustainable, resilient, and accessible to all. Safe, quality jobs must be created that match population and market dynamics, recognising that the private sector represents a far greater component of GDP in Asia-Pacific than development assistance.

Support to develop and uphold good governance via comprehensive legal, policy, and regulatory settings is a prerequisite to creating an attractive enabling environment in which private enterprise can thrive. Nevertheless, carefully targeted and leveraged development cooperation will continue to support the region's balanced growth, particularly in the most vulnerable countries and small island developing states. In middle-income countries, addressing inequalities and pockets of poverty and conflict must be prioritised.

Progress in *gender equality* and *social inclusion* is gaining momentum. Empowerment of women, girls, the disabled, youth, the elderly, and all other marginalised groups of society is now understood to deliver some of the greatest returns on development investment. Only when countries uphold environmental and social safeguards for all can they build resilience, maintain peace, respond to economic shocks, and develop strong, inclusive societies.

Asia-Pacific's rapid growth has come at a cost. Reducing the region's massive carbon footprint goes hand in hand with building climate and disaster resilience and environmental sustainability. Financing is needed for clean

technology, low-greenhouse-gas-emission energy, and sustainable transport in order to bring about change. Development assistance agencies now set aside huge sums to invest in technologies and interventions for climate change mitigation and adaptation.

Growing urban populations need to be supplied with safe food. Only thriving rural communities with land tenure security can meet growing demands. Innovations in climate-smart agriculture and efficient irrigation will boost productivity, while better market connectivity and stronger agri-value chains raise incomes. Moreover, better natural resource management for land, marine and coastal zones, inland water bodies, forests and bio-diversity remains critical.

As the region's cities grow, more prosperous inhabitants demand different services. Urban health, mobility, and environmental sustainability are interconnected. Only solutions that integrate climate resilience and disaster risk management into inclusive and participatory urban planning can build liveable cities that are green, resilient, and competitive. Furthermore, much remains to be done to ensure access to energy, water, sanitation, and other basic public services for all. More emphasis on human development, social inclusion, and protection will address the non-income dimensions of poverty in the region.

Local delivery of the SDGs

NIRAS has invested in offices across the region to build long-term partnerships and nurture talent in inspiring workplaces. With operations in Australia, Cambodia, Indonesia, Lao PDR, Myanmar, Nepal, Philippines, Thailand, Viet Nam, and Taiwan, we offer our partners a rare combination of local understanding, cost-efficient administration, and European best-practice governance and management systems. As you will read on these pages, NIRAS's story is the achievements of our clients. We share, learn from, and build on evidence and knowledge generated within the projects we facilitate and always have the ambition to do more, be this introducing new services, tools and approaches or demonstrating how outcomes can be scaled up and replicated elsewhere.

We look forward to collaborating with governments, funding agencies, the private sector and other partners in building a sustainable future. Join us as we contribute to improving livelihoods and creating societies that are inclusive, stable, and climate-smart.



We understand our clients' communication needs and help make results visible. All NIRAS project reporting is linked to their contribution to one or more of the SDGs.



New technologies create jobs but these require skills that many workers do not yet possess. The challenge for Asia-Pacific is to capitalise on the opportunities technology brings, while preparing for and mitigating risks.

Cross-cutting competences supporting our work

NIRAS adds value through its cross-sector expertise and ability to deliver successful outcomes in large, complex projects. These strengths are not easily categorised but deserve special attention:

- a state-of-the-art results-based, value-for-money project management system incorporating the latest knowledge in planning, programming, monitoring, evaluation and learning (MEL), which applies principles of integrity, accountability and transparency;
- leadership in **gender**, **social inclusion** and the human rights-based approach;
- oversight of large, complex framework contracts valued at over EUR320M for the European Union, UKAID and Nordic clients;
- planning and implementation of international training programmes targeting key influencers in Africa and Asia on topics such as sustainable urban water and sanitation:
- a strong record in fund management, where we combine our expertise in managing different types of funding facilities with thematic knowledge, innovative systems and services, and capacity-building expertise to create bankable projects;
- political economy analysis tools and approaches used from micro to macro levels to assess structures, bargaining processes, stakeholder interests, and relationships as well as economic incentives and trade-offs.

1991 opens

2006 Viet Nam office opens

in Vietnamese

NIRAS takes a stake environment and energy consulting firm RCEE

ffice

2016 opens

2017 **NIRAS** and Alectia

merge and Australia office joins the family

Consolidating its presence in South East Asia, NIRAS invests in SMC Consulting Engineers, Thailand. Our regional office in the Philippines opens. LTS and NIRAS merge and LTS Indonesia office joins the NIRAS family

Agriculture as the driver of rural economic development and stability

SERVICES

- + Agribusiness development
- + Food safety & quality systems
- + Food security & nutrition
- + Mainstreaming climate-safe practices
- + Access to finance & fund management
- + Capacity development



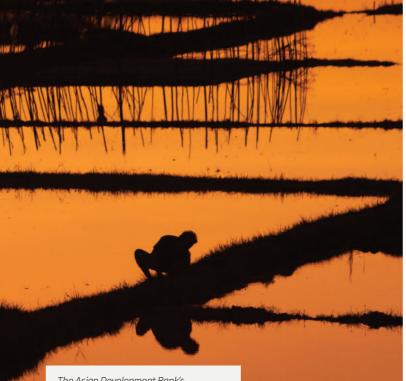
+80 agriculture & rural development experts



Over 500 projects, globally

64%

The percent of food-insecure people in the world who live in Asia (almost 520M in 2016).



The Asian Development Bank's Climate-Resilient Rice Commercialisation Sector Development Programme in Cambodia aimed to increase net incomes of rice producers without compromising the natural resource base.

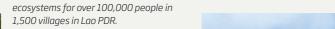


Through CASP II interventions, Sen Thoi, a farmer and father of five from Tboung Khmum Province in Cambodia, learned green farming practices and water management that slashed his water use by half compared to conventional agricultural practice in the past. Photo @Chantola Nat

ith almost 50 years' experience, NIRAS has a proven capacity to successfully implement large, multi-sector programmes covering agriculture, food security, nutrition, and rural development in challenging and fragile working environments. We provide technical expertise for both crop and livestock production, from farm to table, combining consumer and agri-business interests into viable and sustainable value chains.

Agriculture can be a driver of rapid inclusive, green growth, and job creation. Where gainful agricultural production exists, conflicts are rare and people can lead decent lives. Efficient use of resources and adaptation of farming techniques raise productivity. Access to energy enables local processing while transport infrastructure connects farmers and markets. Food security enhances nutrition and learning in school. Commercial farming brings capital to remote rural areas and facilitates trade. Building local government's competence in land-use planning creates resilience and helps protect forests, watersheds and biodiversity.

In promoting good governance, NIRAS catalyses inclusive rural transformation via policy and institutional reforms, decentralisation and local empowerment. We strengthen the capacity of ministries and public and private actors to create enabling business environments and attract rural investments.



TABI has improved livelihoods and



Encouraging farmers to diversify crops

The Agro-Biodiversity Initiative (TABI) in northern Lao PDR has improved rural livelihoods while preserving the biodiversity of natural resources for sustainable growth. The project has piloted over 100 projects empowering rural communities to engage in biodiverse farming practices that produce high yields while simultaneously supporting the persistence of wild indigenous species.

TABI's landscape planning methods are participatory in nature, meaning they give responsibility and ownership to local communities to ensure biodiversity-rich practices continue in the long run. As a result of these activities, Laos has seen an increased demand for organic local honey as well as indigenous rice crops and native fruits like bananas and oranges. TABI also played a key part in the creation of fish conservation zones, which have resulted in increased fish populations and higher incomes for fisheries. An off-shoot of TABI, Pha Khao Lao is an agro-biodiversity online knowledge platform and app that aims to preserve and promote uniquely Laotian

Client: Swiss Agency for Development & Cooperation (SDC)

Duration: 2009–2011; 2012–2016; 2017-2021 Value: EUR20M (all three phases)

By enhancing the agricultural sector, NIRAS is helping rural populations all over the world lift themselves out of poverty and create promising futures for generations to come.

Supporting climate-friendly agriculture value chains in the Greater Mekong Subregion (GMS)

To help farmers and other agricultural value chain actors in the GMS tap into the high-potential climate-friendly agri-food market, the Asian Development Bank and Agriculture Ministries of Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam, and the People's Republic of China launched the Core Agriculture Support Programme (CASP) II. Building on the earlier phase of CASP that emphasised cross-border agricultural trade and climate change adaptation, CASP II aims to strengthen value chains and enhance global market access for the region's climate-friendly agri-food products through capacity building, business development, and improved regional agriculture and policy networks.

Client: Asian Development Bank **Duration:** 2016–2018

Value: EUR4.1M

Land management, forests, and biodiversity: finding the right balance

SERVICES

- + Land administration & registration, customary land registration, & tenure security
- + Landscape, catchment & site-level planning
- + Earth observation tools
- + Institutional development
- + Land policy & legislation
- + Conflict resolution
- + Participatory & multipurpose forestry management
- + Prevention of erosion and water and nutrient loss
- + Creation of value chains for forest products
- + Forestry information systems
- + Biodiversity conservation



Ensuring interaction between cultural, environmental, and economic aspects is a guiding principle of our

30%

Amount of the earth's surface covered in forest



Indonesia, as part of the Participatory Mapping and Planning Project. International Forest Investment and Trade (InFIT) is a joint initiative to reduce impacts of China's international trade in forest products and other commodities grown on forest land whose production affects forest degradation. LTS, Part of the NIRAS Group, ran the project office in Beijing between 2014 and 2017.

Funded by DFID, the China-UK Collaboration on

IRAS is committed to protecting and promoting the sustainable use of terrestrial ecosystems. We view people as the central element of the landscape and support local communities, policy reform, and the implementation of sustainable land management to help protect the landscape-based livelihoods on which so many depend.

Our forestry services aim to balance environmental, social, and economic benefits from the use of land. We pursue integrated, participatory, and multipurpose forest management as an essential instrument in climate change mitigation as well as the reduction of poverty through income generation. Our recipe for improved forest governance calls for comprehensive stakeholder involvement, transparency, and accountability in decision-making.

In addition to reducing conflict and increasing investments in land, land governance projects enhance land productivity, income, and gender equality. Our holistic approach considers the rights of local people as well as a nation's history and economic vision. We support governments in the development of cost-effective land administration systems that meet national objectives and conform to international standards. These systems are adjusted to local conditions and developed within the capabilities of the country's national administration.

The 2017–2022 Green Economic Growth Programme for Papua (GEGP) aims to prevent wholesale destruction of forest resources in the largest area of intact forest remaining in South East Asia. A EUR11.4M project funded by DFID, GEGP aims to strengthen the ability of local authorities to manage economic development and attract investors to green businesses in rural and urban regions of Papua, Indonesia. LTS, part of the NIRAS Group, is working with selected Papuan smallholder farmers and SMEs to develop green, commercially sustainable businesses, for example in agroforestry, spices or timber products, that will be the basis for a more comprehensive green investment strategy for both provinces in Papua.



We apply a holistic approach based on local people's rights as well as the country's history and economic development objectives.

Protecting forestry resources in Viet Nam using the latest accurate data

As a forest-rich country (about 40% of total area), Viet Nam plays an important role in carbon dioxide sequestration. However, a rapidly growing economy has resulted in deforestation and general degradation of the country's forests. Efforts in forest recovery are often hampered by a lack of accurate information needed to make appropriate and effective decisions. Launched in 2009, FORMIS – a management information system for the forestry sector – enabled relevant agencies to integrate their data to improve monitoring and communications as well as reduce emissions from deforestation and forest degradation. It also strengthened forest law enforcement, governance, and trade activities. Pilot systems were created in phase I of FORMIS and the Viet Nam Forestry Administration (VNFOREST) implemented the most promising in phase II. At the project's close in 2018, VNFOREST adopted FORMIS's resource database and monitoring system for official use. Thus FORMIS will contribute directly to future sustainable forest management decisions in support of Viet Nam's socioeconomic development framework.

Client: Ministry for Foreign Affairs Finland Duration: 2009–2013 and 2013–2018 Value: EUR9.7M (both phases)

Setting village boundaries for a brighter future in Indonesia

In Indonesia, village boundaries have been handed down via oral tradition. But this way of sharing the information is increasingly threatened as storytelling fades away and big companies encroach on lands previously considered to belong to the villages. This issue causes challenges to service delivery and sustainable development as the Millenium Challenge Corporation noted when it tried to implement its Green Prosperity Project's interventions to improve natural resource management and use of renewable energy. Because many of the project's initiatives required participatory planning, where the stakeholders in the area are consulted during planning stages, a lack of clarity over village boundaries was hampering progress. To help solve the problem, in the Participatory Mapping and Planning Project, NIRAS and local partner SEKALA were tasked with mapping 82 village boundaries in Riau Province in only 42 weeks. The project team designed a process to enable all local stakeholders to participate in creating a new map of the village boundaries with buy-in from all sides.

Client: MCA - Indonesia Duration: 2017-2018 Value: EUR2.7M

Enabling growth while protecting the environment and adapting to climate change

SERVICES

- + EIAs & environmental assessments
- + Environmental information systems
- + Green growth / green economy
- + Waste management, solid waste
- + Climate change adaptation in the water, land, agriculture & forestry sectors
- + Climate resilient infrastructure
- + Climate strategies, policies & plans
- + Disaster risk management
- + Training & capacity building, including education, networking & awareness building





+400 staff trained in environmental management & planning



+200 ongoing projects directly related to SDG 13 (climate action) and SDG 15 (life on land)

Krau Wildlife Reserve is a protected area in Malaysia

and benefits from the Biodiversity Conservation and

Management of Protected Areas in ASEAN project.

Its caretakers, or mahouts, are from the neigh-

between conservation and surrounding villages.

bouring community, which reinforces the link

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resilience. It generates and communicates evidence on how to build resilience to climate change and disasters in Nepal, especially for the most vulnerable and excluded.

Well-functioning ecosystems are the basis for all major forms of life and crucial to healthy humans.

he state of the environment and climate change is a serious concern for society today. The unsustainable use of natural resources and impacts of human activities on the environment are well documented. It is widely recognised that new approaches and solutions are needed if we are to adapt to climate change. The balance between the environment and nature, on the one hand, and the need for development and growth, on the other, presents a serious challenge but also offers new opportunities.

NIRAS recognises that people, livelihoods, and ecosystems must all be taken into consideration for the successful management of natural resources and the environment. We advocate a holistic and interdisciplinary approach that seeks to maximise synergies between economic, social, and environmental objectives while minimising trade-offs. Together with the key stakeholders, we analyse the often complex situations with dedication. We emphasise socially acceptable solutions and the analysis of opportunities and alternatives.

Turning back the clock on biodiversity loss in ASEAN member states

The ASEAN region (Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam) is an area rich in resources, with three countries classified as megadiverse, four biodiversity hotspots, and vast areas of forests, mountains, and coral reefs. All the more reason for alarm then when more than 20% of the assessed species in the region are under threat. To halt or significantly reduce further biodiversity loss, the EU launched the Biodiversity Conservation and Management of Protected Areas in ASEAN project. The overall aim is to enhance environmental, social, and economic well-being through better biodiversity conservation, effective management of protected areas, and the reduction of biodiversity loss. Biodiversity conservation is being mainstreamed into national development plans and ASEAN Heritage Parks are being established to protect the region's unique habitats and ecosystems. **Client:** European Union

Duration: 2017–2020 Value: EUR1.06M

Increasing production and efficiency along Cambodia's rice value chain

Agriculture remains an important source of income for about 85% of Cambodia's population. Paddy production covers over 80% of cultivated land and contributes significantly to the national GDP as well as job creation and poverty reduction. The Climate-Resilient Rice Commercialisation Sector Development Programme in Cambodia aimed to increase rice producers' net income without compromising the natural resource base. Targeted at the largest rice-producing provinces of Battambang, Kampong Thom, and Prey Veng, the programme helped transform the predominantly subsistence rice sector into a commercially oriented one by improving household and national food security and expanding rice exports. Improvements in the sector were achieved by (1) removing some of the legal and requlatory constraints inhibiting rice commercialisation, and (2) targeting risks of climate change through promotion of mitigation and adaptation measures.

Duration: 2013–2017

Client: Asian Development Bank Value: EUR1.7M

Helping cities become sustainable and liveable

SERVICES

- + Integrated & participatory urban planning
- + Urban climate change adaptation
- + Institutional strengthening and public management
- + Environmental management
- + Competitiveness & local economic development
- + Urban-rural linkages
- + GIS & spatial planning
- + Urban design, public space & housing development

/ ell-functioning and productive cities are fundamental to achieve inclusive economic growth and a strong social fabric. Urban centres keep attracting the young and mobile. With more than half the world's population living in cities, we must urgently improve urban infrastructure, public service provision, good governance, and overall liveability in line with the New Urban Agenda.

NIRAS's approach to working in urban settings is rooted in the interdisciplinary nature of the challenges impeding cities from becoming productive, resilient, and liveable settlements. Our work is often a combination of technical fields such as private sector development, competitiveness and job creation, gender equity and inclusiveness, institutional capacity-building, urban water resource management, climate change adaptation, and energy efficiency. When addressed in tandem, these are some of the core areas of intervention for achieving a paradigm shift in response to rapid urbanisation.

NIRAS draws on its extensive know-how and experience and tailors international best practices and lessons learned to the context of each city in which we engage. We always strive to embed our projects in structures with strong local ownership and take pride in engaging our country offices as well as local expertise in Africa, Asia, Europe, and Latin America when implementing assignments.

> The community-based solid waste management project in Mandalay empowered the local community to improve their living environment and basic services.



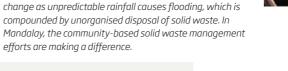
+300 experts can help you to achieve your goals



Asia-Pacific's urban population grew to 48% in 2015, up from 20% in the 1950s, and is projected to rise to 58% in less than 15 years.



efforts are making a difference.



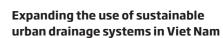


We tailor international best practice to the context of each city with which we engage.



Climate change is increasingly affecting the urban population in Myanmar. The urban poor are particularly vulnerable and impacted by recurrent floods that are aggravated by insufficient drainage capacity. As part of a broader project to upgrade Mandalay's water and sanitation services, NIRAS is piloting community-based solid waste management initiatives, working directly with communities and "agents of change" on better local infrastructure and services. Based on an extensive stakeholder engagement exercise, the team will develop Ward Resilience Committees and Ward Resilience Plans for four selected townships. We will also assess options for recycling, composting, and sludge management and test the feasibility of a Ward Resilience Fund to mobilise resources. Awareness-raising on the interlinkages between climate change, solid waste, flooding, sanitation, and health will be conducted throughout the project.

Client: Asian Development Bank **Duration:** 2018–2022



Sustainable urban drainage systems (SUDS)

handle rainwater and control flooding, which protects livelihoods and infrastructure. SUDS are often designed together with green urban infrastructures such as rooftop and backyard city farms. Piloted in Vinh Yen City, this project built on the potential to combine SUDS with urban farming elements and educated the community on maintaining the system while using it to grow crops. As urban farming is popular in Vietnamese cities, the overall objective was to expand the usage of SUDS in small-scale urban farms to increase climate change resilience and empower the local community. As an integrated element of SUDS, urban farming may indirectly also reduce the maintenance costs of SUDS. The project evaluated SUDS's effectiveness in mitigating the impacts of floods and defined which crops did best in conjunction with different types of systems. In addition, the project developed urban planning guidelines on SUDS and small-scale farming, as well as training and awareness-raising materials that were shared with other cities.

Client: The Nordic Development Fund

Duration: 2015–2018 Value: EUR566K



Infrastructure connecting future societies

SERVICES

- + Roads and bridges
- + Ports and harbours
- + Railways
- + Airports
- + Climate-resilient and sustainable urban environment
- + Energy
- + Coastal erosion and protection, sea flooding



+300 in-house infrastructure experts can help you achieve your goals



Full lifetime solutions, including decommissioning



Latest 3D design



We have more than 80 years' of experience in planning and engineering for ports, harbours, and marine installations worldwide.



NIRAS has supported the Sri Lankan Government in many projects, from port expansion to the development of fishery harbours. We've been involved in coastal protection in the island nation for more than a decade.

eople are constantly on the move, and goods are transported daily between local communities and cities, as well as across national borders. This could not take place without efficient infrastructure. With more than half the world's population living in cities, we face an urgent need to improve infrastructure and public service provision.

NIRAS responds to our clients' infrastructure needs by creating new sustainable solutions and upgrading existing ones. Our work is often a combination of multiple technical fields ranging from planning to construction. Our services cover the full project cycle, from the preparation of master plans and technical and financial analysis, through design and tendering, to supervision, commissioning, operation and maintenance.

In Asia-Pacific, we have significant experience in civil and structural engineering for maritime infrastructure (ports, jetties, shore protection, coastal engineering); building and structural design (from high-rise concrete to complex low-rise and wide-span steel structures); land transport infrastructure (roads, bridges, rail) and land preparation for property development. We have built container terminals in places like the Maldives and Iraq and drawn up port master plans as well as expanded operations in Sri Lanka, Thailand, and Myanmar.

Our infrastructure experts are committed to five key principles: professional expertise, client focus, responsibility, teamwork, and efficiency.

Close to 30 years of supporting Kerry Siam Seaport expansion

SMC NIRAS Consultants has been involved with Kerry Siam Seaport (KSSP) since its inception in 1990. Work started in phase I with the construction of a jetty supported by an onshore depot to handle exports such as sugar and general cargo. SMC was responsible for planning the total facility, managing the environmental impact assessment, detailed design, tendering procedures, and assessment as well as construction supervision of the approach bridge and jetty facilities. Since then, SMC has been closely involved in four consecutive expansion phases, the most recent of which (phase IV) commenced in 2014 and further extends the berth by 650 m to the

Client: Kerry Siam Seaport **Duration:** 1990–2019

Positioning Sri Lanka as the preferred port and shipping destination in Asia

Maritime transport is essential in Sri Lanka, and the island nation plays a substantial role as a regional transport hub due to its strategic location. In order to maintain its competitive edge, Sri Lanka continuously invests in strengthening the capacity of its ports. NIRAS worked with the government to develop a national master plan for the port sector, including the restructuring of the Sri Lanka Ports Authority. We delivered development plans for the ports of Colombo and Trincomalee, as well as concept designs and cost estimates for expansion proposals (passenger terminal and South and North Ports in Colombo and oil and dry bulk terminals in Trincomalee).

Client: Sri Lanka Ports Authority **Duration:** 2016–2018

12

Applying innovative and tested solutions to water management

SERVICES

- + Rural and urban water supply
- + Wastewater management
- + Integrated water resource management
- + Training/capacity-building
- + Climate change adaptation and disaster risk management
- + River basin management
- + Sanitation & hygiene
- + Sector reform
- + Coastal management

ater is essential to human life. Access to safe and affordable drinking water is a crucial right, vital for economic development, social well-being, and the reduction of poverty. Due to the increasing occurrence of water stress and scarcity, increasing variations and uncertainties in weather patterns, deterioration in water quality, and the mismanagement of water, finding and implementing innovative technologies and solutions geared toward the future becomes a matter of urgency.

At NIRAS, we take an integrated and holistic approach to water management, access, and final domestic or income-generating use. Our expertise covers all aspects of planning, design, and implementation of water-related projects in a variety of fields and our team of specialists comprises engineers, biologists, environmentalists, geologists, socio-economists, and financial and institutional professionals.

Integrated water resource management takes full recognition of the multi-disciplinary tasks involved, and our consulting and advisory services cover the entire range of disciplines, including transboundary water resource management. Adaptation to extreme weather events and unpredictability also require technical expertise and state-ofthe-art technologies specific to the environment in which they are to be applied. Projects must be administered wisely and be of economic benefit to society.



+250 in-house water professionals collaborating with +500 external water sector specialists



NIRAS applies tested, yet innovative, methodologies and relies on experience we have acquired on a large number of water-related assignments across the globe



On behalf of the Asian Development Bank, we developed an irrigation master plan in Nepal that integrated updated

river basin planning into the special context of the country's land morphology, topography, land fragmentation, remoteness, and water availability.

> We apply innovative solutions in our services and tools to always be one step ahead in our water sector projects.

Integrating and modernising Myanmar's

complex hydrometeorology systems

Investing in sustainable rural water supply and sanitation in Cambodia

water supply and

zones of Sri Lanka.

sanitation in the urban

and north-western dry

areas of the northern

Recognising Cambodia's susceptibility to climate change and natural disasters, in its second phase, the ADB-funded progamme on rural water supply and sanitation added a significant component concentrating on climate change adaptation (CCA) and disaster risk mitigation (DRM), Accordingly, NIRAS has developed a new, comprehensive capacity development programme integrating CCA and DRM in the water, sanitation, and hygiene (WASH) sector. The project, which improves water supply and sanitation for up to 400,000 residents in 400 villages, has five key outputs: (1) improved community health and hygiene practices; (2) rehabilitated, upgraded, and new water facilities; (3) improved public and household sanitation; (4) strengthened sector planning and development; and (5) enhanced capacity for project implementation. An important component of the project is education and training – at the commune and village level – on resilience and adaptation to floods and other natural disasters and how to mitigate related risks and improve planning. Activities will be rolled out in selected communes to support infrastructure initiatives and enhance sustainability through replication and scaling-up.

Client: Asian Development Bank

Value: EUR 1.7M **Duration: 2017-2019**

Natural disasters such as cyclones often strike Myanmar, inflicting significant losses that disproportionately affect the rural poor residing in water-vulnerable areas. The impact of these disasters can be mitigated with effective observation and warning systems. In the Ayeyarwady Integrated River Basin Management Project, NIRAS provides comprehensive assistance to Myanmar's Department of Meteorology & Hydrology (DMH) to modernise its operations and strengthen its ability to manage the basin's resources and make informed decisions about future investments. This involves upgrading hydromet observation and information systems as well as enhancing navigation on the Ayeyarwady River. The project will benefit millions of poor people living in the vicinity of the basin by protecting the lives and livelihoods of those affected most by storms, floods, and droughts.

Client: World Bank Value: EUR 3.6M **Duration: 2017-2020**



Supporting inclusive growth through sustainable energy

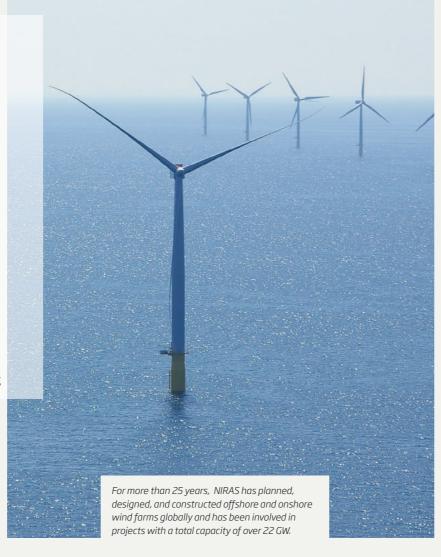
SERVICES

- + Renewable energy policy, planning & technologies
- + Energy efficiency in buildings & industrial environments
- + Institutional development & capacity building
- + Energy fund management & innovative finance schemes
- + Inclusive access to sustainable energy
- + Off-grid supply
- + Regulatory reform
- + Environmental assessment and impact monitoring

s a pioneer in solar energy in Denmark, NIRAS has been providing advisory services for sustainable energy solutions to private and public clients worldwide since the 1980s. Today, we offer expert advice in the areas of policy, finance, regulation, institutional development, and fund management.

In recent years, governments in more than 20 countries have turned to NIRAS for support in fostering the development of sustainable energy. Our capacity-building expertise enhances the ability of local government institutions to keep up with new actors and developments in the energy sector while ensuring good governance.

To reach the climate goals, large investments are needed. NIRAS is at the forefront in developing innovative instruments to leverage private investment while minimising public support. We develop country-specific renewable energy (RE) support schemes and energy fund management programmes to attract investors to Asian markets. While Asia-Pacific's "island geography" brings several challenges, it offers even more opportunities for RE technology. We support the use of decentralised energy systems to maximise economic, environmental, and social benefits. Nevertheless, energy efficiency (EE) remains the jewel in the toolkit of energy planners as capacity can be freed at low cost and the potential of EE still remains untapped. EE measures allow for a much better cost-tobenefit ratio than new RE installations in mainland and island economies.





Over 400M Asians still lack access to electricity and power



NIRAS ensures efficient, affordable, and safe use of renewable energy sources



We improve energy efficiency and reduce CO₂ emissions



Market-based approaches and self-sustaining local energy markets create a lasting impact.

Offshore wind farm development in the Taiwan Strait

In what was primarily a technology transfer and capacity-building project, NIRAS worked with the Taipei-based R&D Centre of Ship & Ocean Industries (SOIC) to realise their ambitions of becoming a regional centre of excellence in offshore wind development. Delivered over the course of two phases, the project first focused on building up SOIC's offshore wind development knowledge by assessing training methodologies and capabilities. This was followed by workshops on, for example, project management and software recommendations. Phase 2 workshops were customised to meet client requirements, such as a feasibility study and preliminary design. NIRAS also provided technical assistance throughout the project and delivered WindGIS - a web-based GIS tool aimed at data collection and processing for offshore wind.

Client: TWI Ltd Value: EUR 1,8M Duration: 2012–2014

Enhancing renewable energy and energy efficiency solutions in Mekong

The Greater Mekong Subregion has huge energy growth requirements. A large proportion of residents do not have access to electricity, and there is over-reliance on fossil fuels in power generation with serious climate change implications. The Energy and Environment Partnership (EEP) aimed to address this by stimulating a market for renewable energy through business development, capacity building, and improvement of policy frameworks. As part of EEP, NIRAS managed a results-based challenge fund supporting mainly private project developers in renewable energy-based rural energy access projects. Over the course of eight calls for proposals, 55 waste-to-energy, biogas, biomass, and solar projects with a total value of EUR28.9M were funded - to the direct benefit of 50,000 people living in the Greater Mekong Subregion.

Client: Minstry for Foreign Affairs Finland

Value: EUR 17M

Duration: 2009–2012 and 2014–2018



Ensuring enduring peace and inclusive prosperity for all

SERVICES

- + Democratic governance and rule of law
- + Gender mainstreaming & budgeting
- + Support to civil society & media
- + Institutional and organisational strengthening
- + Decentralisation, local authorities
- + Conflict prevention, reconciliation, peace & stabilisation
- + Migration



Women's empowerment is a key driver of a nation's development



The number of poor in South Asia has declined from half a billion in 1990 to 216 million in 2015

he promotion of gender equality, human rights, and peaceful and inclusive societies for sustainable development is at the very core of NIRAS's work. We understand that if we don't build societies that are open to everyone, offer just treatment to citizens, and provide effective, accountable, and participatory governing bodies, social peace may not last, violence can (re)surface, and most develop-

ment achievements will be lost.

We have a long track record of supporting civil society and promoting dialogue with government authorities to enable community participation in decision-making and more transparent, accountable governance. NIRAS strengthens democratic institutions, the rule of law, and the integration of gender perspectives through numerous initiatives including capacity development, effective M&E systems, and gender mainstreaming and budgeting. In managing a response roster, we actively work towards security, peace, and stability in states dealing with conflict and fragility. Through several global training programmes, we build capacities of stakeholders in affected countries and regions with regards to human rights, gender, good governance, peace, and security.

Using methods such as the human rights-based approach and integrating a gender perspective throughout the project cycle in every sector – optimising outcomes for *all* beneficiaries – further enables us to base our work on international human rights standards and make our own actions accountable.

Our worldwide experience shows that societies which are free from violent conflict are much more likely to enjoy human and societal well-being and economic growth.



In the UNNATI project in Nepal, NIRAS designed and managed studies on the effects of the programme on gender roles, women's burden of labour, and women's economic empowerment as well as the contribution of UNNATI to economic and social progress among disadvantaged groups. @Terry Boynton



The GIZ-funded Peace Fund in Timor-Leste supported qualified institutions in implementing measures enabling youth to engage in non-violent conflict management.

@Kate Dixon



Strengthening institutional capacity in Afghanistan

Although its focus is on increasing agricultural productivity through improved access and use of water at farm, scheme and river levels, the Panj-Amu River Basin Project's overarching objective is to support the government's effort to increase per-capita income and reduce poverty among rural and pastoral communities. In increasing annual farm incomes by up to 55% over 55,000 households and creating approximately 11,000 full-time rural jobs per year, the project will improve food security – by substituting imports for wheat and improving self-sufficiency – and increase exports of high-value products such as fruit and nuts, creating more economic opportunities for agribusiness development, particularly for input suppliers and processors of and market intermediaries for agricultural products. NIRAS will work with staff from the Ministry of Energy and Water and the Ministry of Irrigation, Agriculture, and Livestock to improve water allocation and availability, enhance their command areas, and better manage and protect watersheds. A community-based approach will be taken for the latter project activity, which will involve training of and collaboration with communities.

Client: Asian Development Bank **Value:** EUR3.7M

Duration: 2018–2023

Enabling fair access to land in Bangladesh

The issues surrounding land ownership are complex in Bangladesh, the world's most densely populated country. A majority of the rural poor are landless. Lack of land ownership and inequalities of access pose clear obstacles for inclusive development, poverty alleviation, lasting peace, human rights, and good governance. National land administration policies and systems are underdeveloped, overlapping, and unwieldy; the perception of corruption is high, and the focus is more on revenue collection than clear ownership and management. In an effort to address this, the Promote Access to Land in Bangladesh Project supported the government in promoting new land policies and reforms, introducing a modern and efficient land management system, and strengthening access to land and property rights for all citizens. Studies were conducted on the land rights of vulnerable people with the aim of identifying restrictive policies as well as cultural, traditional, and institutional barriers to land ownership. The project worked on two levels, building an official land ownership registration system with the Ministry of Land and establishing an authoritative land record on the upazila or sub-district level.

Client: European Union **Value:** EUR6.2M **Duration:** 2012–2017

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Developing skills and promoting employment to bolster growth

SERVICES

- + Development of conducive policy frameworks
- + Technical, vocational & educational training
- + Development of curricula and training programmes
- + Training of trainers
- + Labour market information systems
- + Private sector development and engagement
- + Set up & management of skills development funds
- + Support to national employment service centres
- + International training programmes (ITPs)



+3,000 professionals from Africa and Asia have participated in our ITPs



44 TVET projects in 8 years worldwide



Our projects are results-driven

kills development and employment promotion play a key role in achieving countries' development aspirations.

Only real jobs offer young and mobile people a true perspective. Applying a holistic approach, NIRAS works to strengthen governance structures that link education and training with the labour market. We promote a lifelong learning perspective and consider skills development within the entire education system, be it school-based, in-company, cooperative or informal in nature. In supporting the development of

conducive policy frameworks, we assist governments in drafting regulations to

ensure that initiatives are based on a

national socio-economic goals.

comprehensive strategy that align with

Inclusive and equitable skills development increases economic productivity and addresses inequality. Therefore our goal is to improve the quality of existing education and training systems. We do this by working closely with national counterparts to strengthen local structures and institutions in the context of existing socio-economic conditions. We support the development of integrated labour market systems and provide guidance on better linking human resources with current and expected skills needs. NIRAS also actively engages the private sector and target especially small and medium enterprises (SMEs) as an effective and efficient way to generate employment opportunities in development contexts.

Building competencies for the implementation of Viet Nam's

Green Growth Strategy The multi-component training programme on Green Growth for Viet Nam sets out to provide advanced and interrelated knowledge about the inclusive green economy and to build up competencies for the development and implementation of sustainable macro-economic policies in key institutions, the Vietnamese SDGs and the implementation of the 2014–2020 National Action Plan. Focused on specific target groups, different course formats are offered using interactive methodologies and blended learning, comprising lectures and tutorials, interactive group exercises, as well as excursions to institutions and best practice examples of applied green economy in Germany. Results confirmed that participants share a joint understanding of green economy concepts and policy instruments and have improved their networks with other key stakeholders. They have also been able to pass on their knowledge by acting as resource persons within or across institutions, writing articles for journals, and including content from the programme in lectures and presentations.

Client: GIZ Value: EUR 1.5M Duration: 2015–2018

Advanced training and capacity building for organisational change

Continuous capacity building is vital for securing sustainable development. NIRAS specialises in preparing and conducting international training programmes (ITPs), seminars, and study tours on a variety of topics including sustainable urban water and sanitation (SUWAS). Achieving SUWAS services for everyone, everywhere is a key SDG that requires not only political commitment and leadership, but hard work, increased capacity, innovative ways of working and new forms of collaboration between sectors and individuals. NIRAS implements the advanced SUWAS ITP on behalf of Sida and in partnership with WaterAid. Participants, all capable to drive change within their own organisation, are selected from five African and five Asian countries (in Asia: Bangladesh, Cambodia, Lao PDR, Myanmar, and Nepal). The ITP – which contributes to improved planning and implementation of SUWAS where the rights and needs of all citizens are taken into account - offers new knowledge, concrete problem solving, an extended professional network within and across countries, and a toolbox of methods and local support to drive change.

Client: Sida Value: EUR7.2M Duration: 2016–2021

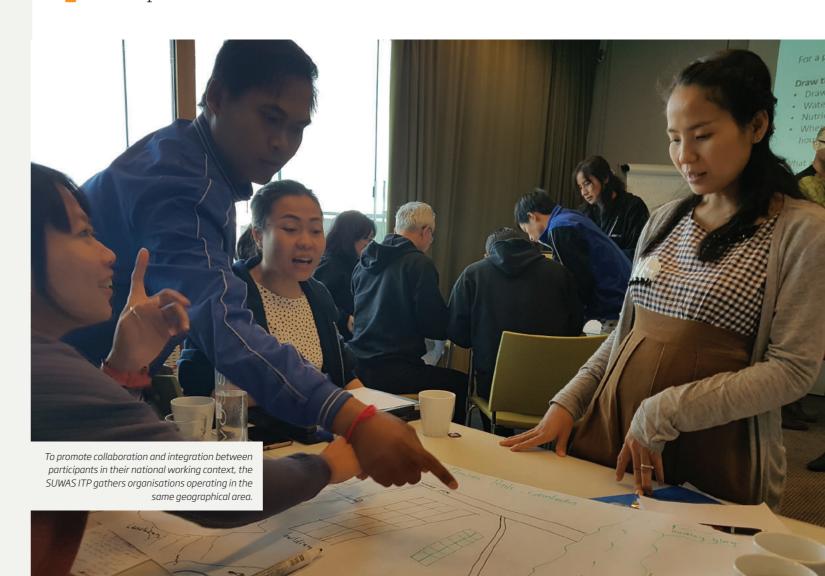


NIRAS is providing support to Azerbaijan's newly established agency for vocational and educational training (VET) and its national qualifications framework. The main objective is to improve VET policy and regulations while developing educational standards and curricula for priority sectors. The EU-funded project runs from 2017 to 2019, with a value of EUR3.1M.

We apply an integrated approach based on the three interrelated pillars: (1) skills development, (2) labour market interventions, and (3) private sector development.



The NIRAS Young Professional Academy is a two-year on-the-job development consulting training programme for recent graduates and selected participants from NIRAS country offices. Participants learn about business development and project management as well as consultancy methodologies. Hlaing War War Aung is a project manager at our office in Myanmar. Originally from Yangon, she studied Civil Engineering in the Technological University of Mandalay. War War is in her second year of the training programme and, with a professional background in Urban Development and Urban Services, she is a great asset to the NIRAS family.



Promoting a vibrant private sector to create jobs and grow economies

SERVICES

- + Private sector development & entrepreneurship
- + Science, technology & innovation (STI)
- + Inclusive business
- + Fund management and access to finance
- + Investment climate & public-private partnerships
- + Curriculum development
- + Policy analysis and market studies
- + Facilitating innovation linkages



Unleashing the entrepreneurial potential of women and youth



We promote innovative Smart City solutions and city-to-city collaboration





A World Bank loan and technical assistance from NIRAS are helping to commercialise the agricultural sector in Tajikistan and improve stakeholders' livelihoods by increasing the quality of Tajik products in selected value chains and making them more marketable

survived the start-up phase and created more than 300 jobs. Over 200 experts were trained by IPP2 and are involved in the disseminating of entrepreneurship and innovation knowledge in Viet Nam.

ustainable development cannot be secured without a sound revenue base, and a vibrant private sector is the engine to achieve this. Without economic perspectives, young people will leave home. Our approach to economic development is designed to benefit both local communities and investors. We provide technical assistance and skills transfers to the public and private sector [e.g., micro-, small and medium-sized enterprises (MSMEs), entrepreneurs, start-ups, farmers, processors, and larger industries] as well as academia. Applying a "Making Markets Work for the Poor" socially inclusive approach, we include elements of business development services, value chain development, market linkage creation, and public-private partnerships (PPPs), without ever compromising on good governance.

Support to MSMEs is vital due to their potential for creating jobs and decent living standards. Our approach builds private- and public-sector capacity as we cover the spectrum from knowledge development via transfer and commercialisation to utilisation. We promote open innovations by linking clients to local and international expertise and facilitating knowledge exchange.

NIRAS also facilitates access to finance via various funding sources and new mechanisms with scalability potential. We do this by strengthening financial intermediaries and promoting customer-centric models.

We are committed to fostering a vibrant private sector and investment climate that stimulates the arowth of MSMEs and unleashes the entrepreneurial and creative potential of citizens.

We use the promotion of science, technology, and innovation as a platform to achieve wider impacts such as human capital development.

Promoting sustainable, inclusive growth in Nepal

Through the Inclusive Growth Programme (UNNATI), the Governments of Nepal and Denmark are collaborating to strengthen market-based growth with an emphasis on employment and improved living conditions. Targeting seven districts in the eastern region, UNNATI (which means prosperity or progress in Nepali) focused on the agriculture sector, which creates jobs for about 80% of the population and has significant potential for growth if bottlenecks such as lack of upgraded roads and access to finance can be addressed. NIRAS's role in UNNATI was to implement an effective and practical monitoring and results measurement system that regularly channelled information and key learning into programme decision-making and short- and long-term planning. We also conducted studies on critical subjects such as UNNATI's effect on gender roles, women's burden of labour and women's economic empowerment.

Client: Danida Value: EUR1.4M **Duration: 2014-2018**

Establishing an innovation ecosystem in Viet Nam

The Viet Nam-Finland Innovation Partnership Programme (IPP) was launched in 2009 to support Viet Nam's national innovation system as well as the country's goal of becoming a knowledge economy. NIRAS implemented both phases of the programme. The IPP's main goal was the creation of an enabling entrepreneurial and innovation ecosystem in Viet Nam that 1) supports the establishment of high-growth, innovative companies; 2) promotes collaboration with foreign partners; and 3) contributes to innovation-led economic development. In this goal, the programme was highly successful, with the creation of over 300 jobs created by IPP-funded and accelerated start-ups. IPP laid the foundation for a strong entrepreneurship and innovation ecosystem in Viet Nam and pioneered best practices, which are being replicated by the Government of Viet Nam and other ecosystem developers around the globe.

Client: Ministry for Foreign Affairs Finland Value: EUR11M (Phase II)

Duration: 2009–2014 and 2014–2018

We optimise your processes and production facilities

SERVICES

- + Advice on achieving operational excellence & sustaining capital
- + Definition and design of production facilities
- + Delivery of production facilities (CAPEX)
- + Sustainability and food safety
- + Food and beverage
- + Pharma and life science
- + Industrial production and packaging
- + Logistics and supply chain



Tibet Tiandi Green Beverage Company to develop a masterplan with different expansion scenario options.



More than 200 dedicated process industry experts



Innovation, sustainable solutions, and best practices in quality and hygiene for food manufacturing



Advisor to the process industry for more than 40 years

Acting as project manager, NIRAS worked with Carlsberg to establish a greenfield brewery in Myanmar.



The cross-disciplinary approach to our solutions integrates function, design, and economy with long-term development.

NIRAS know-how ensures high quality products at the Seoul Dairy Cooperative's new dairy production factory in South

s food and beverage process specialists, we provide expert \consultancy across all areas of the investment process, project execution, and strategic production optimisation. Our services cover the full range of decision support, project services, and operations services.

We transform visions and challenges into sustainable solutions – from the first idea through to full operation. Our experts' hands-on experience and specific industry knowledge is key to our successful track record. NIRAS consulting engineers bring in-depth knowledge and expertise directly from process industries, encompassing all aspects of the food and beverage industry, the pharmaceutical and life sciences sector, as well as other process industries with complex utility installations.

NIRAS provides a complete range of services across the industry. In addition to defining, designing, and implementing new facilities and equipment and optimising production, we have profound product and industry knowledge in beverage, dairy, meat, poultry, and fish that covers environmental sustainability and food safety, packaging, as well as management decision support, logistics, and supply chain management.

Helping a South Korean dairy producer design a state-of-the-art facility

Seoul Dairy Cooperative is a major dairy product manufacturer in South Korea. Established more than 35 years ago and one of the world's largest milk-processing plants, the existing facilities in Yang Ju will be upgraded to enable production of up to five million 200 ml packs or bottles of milk a day. Based on our expert knowledge of modern, hygienic and efficient dairy productions, NIRAS has delivered the master plan for the state-of-the-art facility. With our many years of experience in designing utilities for the dairy industry, NIRAS made and controlled the mass balance to secure a lean production without any bottlenecks in the various production areas. The master plan also included modern automated production technologies to save manpower and natural resources, reducing energy consumption, and ensuring the highest possible quality level of the approximately 70 different dairy products which Seoul Dairy Cooperative produces.

Client: Seoul Dairy Cooperative **Duration:** 2017–2018

Developing a greenfield brewery in Myanmar for Carlsberg

NIRAS helps beer and beverage brand owners improve all areas of investments, project execution, and production optimisation. We have been involved in several brewery projects in Asia-Pacific, including in the People's Republic of China and Sri Lanka. In Myanmar, we managed the establishment of a greenfield brewery for Carlsberg when it decided to enter into a joint venture with a local partner in the town of Bago. In addition to overall project management, NIRAS's services included feasibility studies of land and water services, project execution method, tendering, procurement strategy, and conceptual design. Subsequently, over two years, we supported Carlsberg throughout the procurement, site development, construction, installation, and commissioning phases, and helped ensure that the project lived up to international standards.

Client: Carlsberg **Duration:** 2013–2015





NIRAS offices in the Asia-Pacific region

Our decentralised structure ensures that we are always close to our projects. With 51 offices in 27 countries worldwide, we maintain strong local ties to clients, experts and organisations in all of our key markets. Building on our motto "we listen, we learn, we deliver", NIRAS is proud to be a long-term partner in the pursuit of growth and prosperity for the countries in which we work. Our representations are staffed by professionals committed to building partnerships with local service providers and train and recruit local talent beyond the lifespan of individual projects. NIRAS sees this as a contribution to building sustainable and equitable future societies wherever we work. Contact our representatives to see how we can support your needs.



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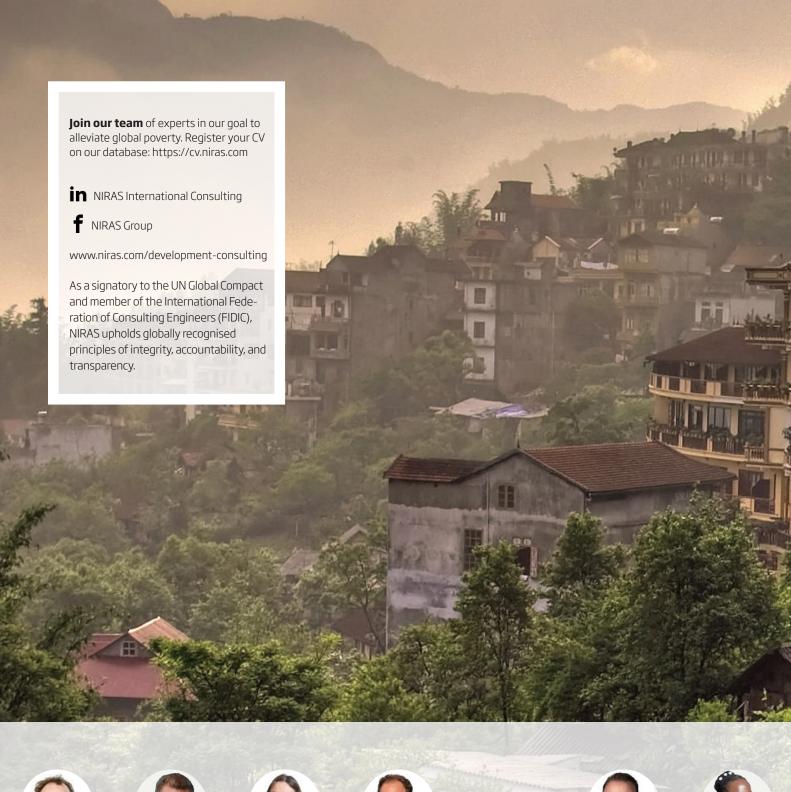
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