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EVERY SEASON NOW

SIP Small Irrigation Programme

SMALL IRRIGATION PROGRAMME


Photo By T. Gregoire
SIP
Small
Irrigation
Programme
EVERY SEASON NOW
The Legacy of the Small Irrigation Programme







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CHAPTER 1

INTRODUCTION
WATER, COMMUNITIES AND CHANGE

For generations, farmers in Nepal's hills and mountains have built and maintained irrigation systems together. Drawing water from springs and streams, they dug canals, shared water and carried out repairs to keep their fields productive. This knowledge and collective effort provided the foundation on which the Small Irrigation Programme (SIP) built its work.



Photo By T. Gregoire

Nepal has 3.56 million hectares of agricultural land, of which 2.54 million hectares are suitable for irrigation. However, only 1.08 million hectares currently receive irrigation, with most irrigated land concentrated in the Tarai. In the hills and mountains, about 185,000 hectares are irrigated through 3,700 mainly surface-water schemes, and an additional 98,000 hectares have been identified as having irrigation potential. Despite this, irrigation is often limited to supplementary monsoon supply, with only 18% of irrigated land benefiting from reliable year-round water access.

Approximately 98% of the irrigable area in the hills and 55% in the tarai are under Farmer-Managed Irrigation Systems

RATIONALE FOR STRENGTHENING IRRIGATION SERVICES

Despite progress in irrigation development, major challenges continue to limit agricultural productivity in Nepal. While a large share of cultivable land has access to irrigation, only about 40% benefits from a reliable year-round water supply. In Koshi Province, inadequate irrigation services, weak operation and maintenance, limited technical capacity and poor coordination between irrigation and agriculture agencies remain key challenges. Reliable irrigation has been shown to increase crop yields by over 30% and cropping intensity by more than 40%, helping farmers improve production and income.

Nepal's dependence on remittances and increasing male migration have also left women with greater responsibility for farming. Improving irrigation systems and strengthening farmer institutions can help create more secure livelihoods, particularly for women and smallholders.



Photo By T. Gregoire

LOCAL INFRASTRUCTURE FOR LIVELIHOOD IMPROVEMENT (LILI)

FROM AUGUST 2006, LILI WAS IMPLEMENTED IN SIX DISTRICTS: ACHHAM, DOTI, DAILEKH, JAJARKOT, DOLAKHA AND RAMECHHAP.



As rural poverty in Nepal is closely linked to unreliable irrigation services, the Swiss Agency for Development and Cooperation (SDC) launched LILI to improve and promote farmer-managed irrigation as a practical way to increase food production, income and resilience among poor rural households. The programme was implemented by HELVETAS Swiss Intercooperation and aimed to: i) Improve food security and livelihoods; ii) Expand irrigation coverage; iii) Support disadvantaged groups (DAGs), women and smallholders who often owned marginal land and faced social and economic exclusion; iv) Increase agricultural productivity and incomes through year-round irrigation, enabling farmers to diversify crops and grow higher-value produce; and v) Demonstrate a cost-effective, community-managed irrigation model that could influence national policies and local government investment.

EMERGENCE OF THE SMALL IRRIGATION PROGRAMME (SIP)

By the end of LILI in 2014, improved irrigation had helped farmers produce more food and communities gain experience in managing their schemes. Yet increasing agricultural income required access to agricultural services, inputs and markets alongside reliable irrigation.

SDC launched SIP in 2015 to build on this experience. The programme retained LILI's community-based approach while placing greater emphasis on supporting smallholders, particularly disadvantaged families, increase their agricultural incomes and reduce poverty. It also worked to strengthen government capacity to plan, finance and manage small irrigation.

FARMERS WERE PRODUCING MORE FOOD AND COMMUNITIES WERE MANAGING IRRIGATION SUCCESSFULLY.

2014

LILI HAD PROVEN THAT WATER COULD TRANSFORM LIVES.

CONSTITUTIONAL MANDATES:

Local governments (LGs) have sole responsibility for planning, financing and implementing small-scale irrigation schemes within their geographical jurisdictions, as set out in the Constitution and the Prime Minister's Office's "Classification and Standards–2023." Community groups remain responsible for managing these schemes. Previously informal, these groups are now being formalized as Water Users' Associations (WUAs).

Provincial governments undertake medium-sized irrigation schemes, while the federal government implements irrigation projects of national pride and large-scale schemes.

	Mid hills	Terai	Mountain
LG	<50 ha	<500 ha	<25 ha
PG	<100 ha	<5000 ha	<50 ha
FG	>100 ha	>5000 ha	>50 ha






Photo By T. Gregoire



STRENGTHENING GOVERNMENT OWNERSHIP

SIP aimed to institutionalize small irrigation within government systems through a one-window approach to planning, financing and managing schemes. It supported common procedures for planning, budgeting, construction and monitoring, while building the skills needed to carry out this work.

Nepal's transition to federalism following the 2015 Constitution made this support particularly important. As LGs assumed responsibility for small irrigation, SIP collaborated with them and with communities to identify needs, plan schemes and oversee implementation. The aim was to enable LGs and WUAs to continue the work beyond the programme.



Photo By T. Gregoire



WATER AS A SHIELD AGAINST AN UNCERTAIN CLIMATE

At the same time, climate change made farming increasingly risky. Unpredictable rainfall, longer dry spells, floods, and landslides challenged traditional practices and threatened livelihoods. In this changing landscape, irrigation became much more than a productivity tool. Reliable access to water gave farmers confidence to invest, diversify, and plan for the future. It became a foundation for resilience.

Photo By T. Gregoire





Photo: Local Government Exit Workshop in Dhankuta cluster, graced by the Minister and Secretary of Koshi Provincial Ministry of Water Supply, Irrigation and Energy

ADAPTING, INNOVATING, AND LEAVING NO ONE BEHIND

Throughout the years, the programme adapted continuously to changing realities, embracing social inclusion, responding to climate risks, and encouraging innovation. Women and disadvantaged groups gained greater participation and influence, reinforcing the principle that sustainable water management depends on equity and collective responsibility.

A PROUD HANDOVER, A LASTING COMMITMENT

As SDC concludes its direct engagement, it does so with deep satisfaction. The legacy now rests with the communities, local governments, and institutions that have made it their own. Ultimately, this is not a story about canals, reservoirs, or infrastructure. It is a story about farmers who transformed their land, local leaders who embraced new responsibilities, and communities that proved the enduring power of working together.

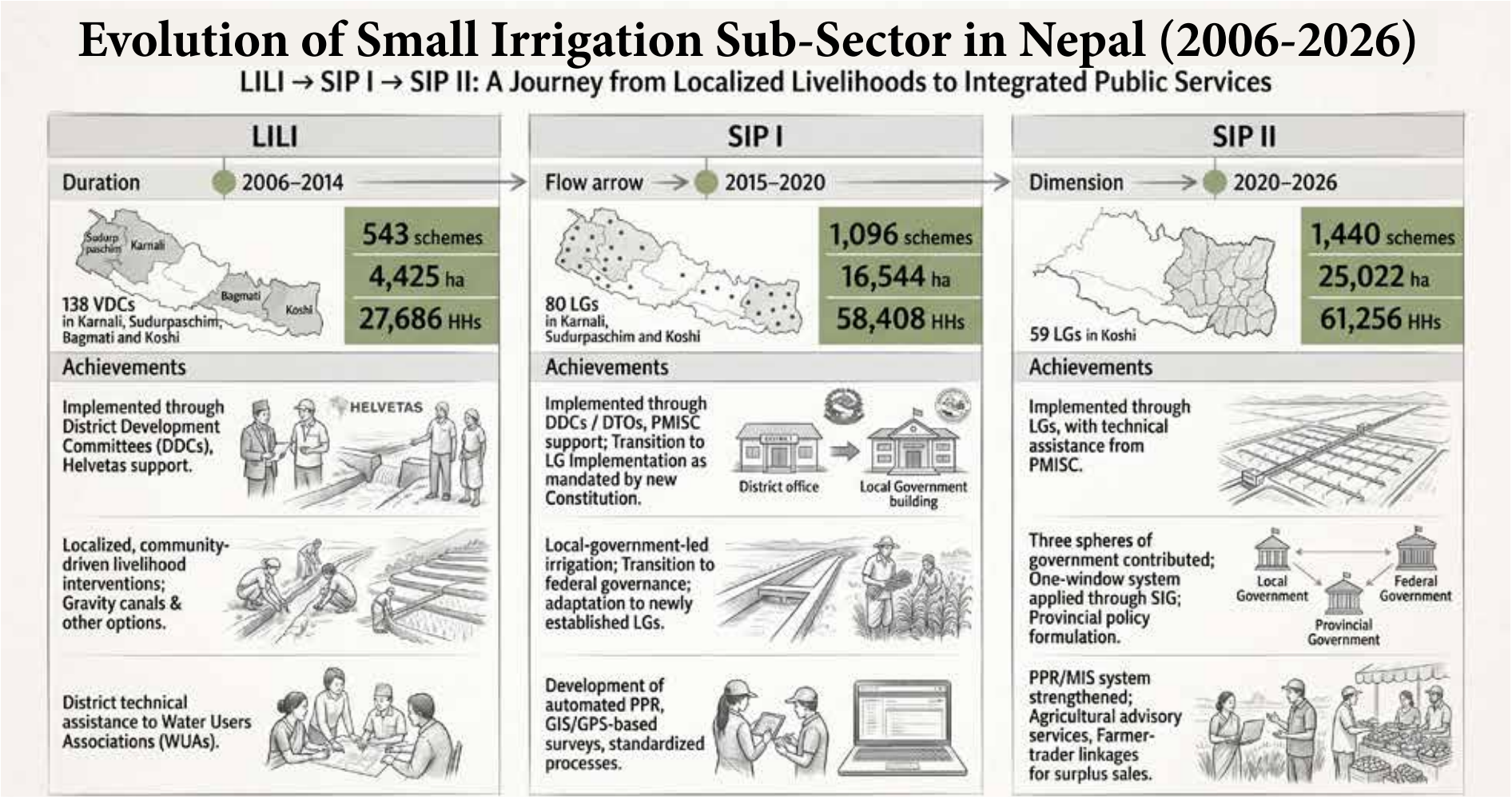


Figure 1: Evolution of Investment in Nepal's Small Irrigation Sub-Sector: LILI to SIP II (2006–2026)

Over two decades, Nepal's small irrigation sub-sector evolved from localized, community-driven livelihood interventions into a more institutionalized, technology-enabled and locally owned public service delivery model. The evolution from Local Infrastructure for Livelihood Improvement (LILI) to Small Irrigation Programme Phase I (SIP I) and SIP Phase II (SIP II) reflects a progressive shift in geographic coverage, institutional ownership, technical standards, social inclusion, climate resilience and market orientation.





Photo By T. Gregoire

CHAPTER 2

INSTITUTIONAL ARRANGEMENTS

AN INSTITUTIONAL ARCHITECTURE BUILT ON GOVERNMENT SYSTEMS

SIP was structured to operate through Nepal's multi-tier government system; through federal and provincial oversight bodies, down to the WUAs that build and manage irrigation schemes on the ground. This reflected two deliberate choices: alignment with the federal, provincial and local government mandates set out in Nepal's constitution 2015, and a functional separation between policy direction, technical programme management and community-level delivery, held together as a single coordinated system rather than four disconnected layers.

The resulting architecture links four tiers. First- a federal tier anchors the programme in national policy and inter-ministerial coordination, through the Department of Local Infrastructure Development (DoLID) under Ministry of Infrastructure Development (MoID) as the federal focal agency. Second- a provincial tier carries strategic oversight of the conditional grant to LGs, through Irrigation and Energy Development Division (IEDD) of Ministry of Water Supply, Irrigation and Energy (MoWSIE). Third- a programme-management and technical-assistance tier converts the government decisions through Project Advisory Committee (PAC) at the federal level and Project Coordination Committee (PCC) at the provincial level into work plans, budgets and field support, through the Programme Coordination Unit (PCU) and the Programme Management and Implementation Support Consultants (PMISC). Fourth- a local-government and community tier; LGs, their Infrastructure Development and Environment Management Section (IDEMS), Economic Development Section (EDS) and Agriculture Development Committee (ADC), the Project Implementation Committee (PIC), and WUAs; plans, implements and subsequently operates and maintains the schemes.



SIP INSTITUTIONAL STRUCTURE

Functional relationships between policy, advisory, programme management and implementation levels

Government of Nepal
Mininstry of Finance (MoF)

Government of Switzerland
Embassy of Switzerland

Bilateral Agreement

DoLID (under MoID)
Federal Focal Agent

Programme Advisory Committee (PAC)
Federal inter-ministerial coordinaiton & budget/work-plan oversight
Chair: MoID | Member-Sec: Senior Divisonal Engineer, DoLID (Programme Advisor)

Member institutions
NPC-MoF-MoEWRI-MoALD-SDC

MoWSIE / IEDD
Provincial coordinating agency
Hosts the PCU

Programme Coordinaiton Committee (PCC)
Provincial Strategic oversight, annual planning & budget decisions
Chair: Minister, MoWSIE | Member-Sec.: Chief, IEDD (Programme Coordinator)

Member institutions
Prov. Ministry of Land Mgmt, Agri & Ministry of Economic Affairs
DoLID-LG Chairs/Dy-Chairs - SDC

Programme Coordinaiton Unit (PCU)
Province-level programme management

PMISC
Technical Assistance Through Palika Support Units

Local Governments (Palikas)
Implementing agency; LG Council approves schemes
PIC-Chair: LF Chair; Members: ADC, CAO, IDEMS, PMISC focal person

IDEMS | **EDS** | **ADC**

Water Users' Associations (WUAs) & Beneficiary Farmers
Community-level construction, operation & maintenance

Policy / bilateral | Advisory / coordination | Programme mgmt. | Technical assistance | LG Implementation | Community /WUA

Grey outline boxes denote linked ministries/institutions rather than sequential reporting levels.



Dr. Danielle Meuwly
Ambassador of Switzerland to Nepal



Matthias Meier
Deputy Head of Mission Embassy of Switzerland



Aman Jonchhe
Programme Management Specialist/ Team Leader Embassy of Switzerland

Partnership and Trust

SWISS AGENCY FOR DEVELOPMENT AND COOPERATION

Nepal and Switzerland have maintained a longstanding partnership built on mutual trust, respect, and a shared commitment to inclusive and sustainable development. Switzerland has been a trusted development partner of Nepal for nearly 70 years, supporting the country's development efforts through technical cooperation, institutional strengthening, and investments in infrastructure and livelihoods. The SDC has consistently emphasized locally owned solutions, community participation, good governance, capacity development, and the sustainable use of public resources.

The Small Irrigation Programme (SIP), initiated in 2015 represents another important chapter in this longstanding partnership. SDC's engagement focused on institution building, policy formulation, training, mentorship and promoting partnerships. Through collaboration among federal, provincial, and local governments and communities, SIP has supported the development and rehabilitation of small irrigation systems, enabling farmers to access year-round irrigation on more than 40'000 hectares of farmland and increase agricultural productivity.

SIP has strengthened local ownership, institutional capacity, and community-based management, reinforcing the principle that sustainable development is built through partnership, trust, and locally led solutions.



Mr. Ashok Kumar Shah
Director General, DOLID



Mr. Kamal Kumar Adhikari
Deputy Director General, DOLID



Mr.Sampat Neupane
SDE, DOLID

DEPARTMENT OF LOCAL INFRASTRUCTURE DEVELOPMENT (DOLID)

The Department of Local Infrastructure Development (DoLID), under the MoID, is a Government of Nepal institution mandated to support the development of rural and sub-national infrastructure and promote balanced, sustainable and resilient infrastructure development. Its areas of work include local roads and motorable bridges, suspension bridges and other local infrastructure. The Department also contributes to the development and dissemination of technical guidelines, standards, planning approaches and implementation practices, while strengthening the capacity of local governments and communities to plan, implement, operate and maintain local infrastructure. Through its institutional experience and technical capacity, DoLID has provided an important platform for integrating small irrigation into the broader rural infrastructure and local economic development framework.

The partnership between DoLID and the SDC has evolved through cooperation in rural infrastructure, local development and small-scale irrigation since 2006. Building on the experiences of the LILI and the Trail Bridge Support Unit (TBSU), the partnership was further strengthened through the SIP-I, with the then DoLIDAR and LGs as key institutional partners and SDC providing technical and financial support. Following Nepal's transition to federalism under the Constitution of 2015, SIP-II marked a new phase of the partnership, emphasizing local government ownership and locally led implementation. DoLID provided institutional and technical support for linking small irrigation with agricultural production, rural livelihoods and local economic development, while SDC contributed financial and technical assistance, capacity development, knowledge sharing and institutional strengthening. The partnership thus progressively evolved from a centrally supported programme approach towards a decentralized, demand-responsive and partnership-based model, contributing to stronger federal governance system.



Hon. Minister Tilchan Pathak MOWSIE



Mr. Pushkar Prasad Pokharel
Secretary, MOWSIE



Mr. Krishna Prasad Rajbansi
SDE, Chief-IEDD, SIP Focal Person at MOWSIE

MINISTRY OF WATER SUPPLY, IRRIGATION AND ENERGY

Politically, the Koshi Province comprises 14 districts and 137 LG units, with Biratnagar as its provincial capital. It has remarkable geographical diversity, ranging from the Terai plains to the high Himalayas, including the Everest and Kanchenjunga regions. The province is endowed with significant natural resources, agricultural potential, tourism, hydropower and cultural diversity. Agriculture, industry, trade, tourism and services are the major components of its economy, while its borders with India and China provide considerable opportunities for cross-border trade and regional economic development. The Koshi Province Ministry of Water Supply, Irrigation and Energy (MoWSIE) is responsible for planning, development, regulation and coordination of water supply, sanitation, irrigation, energy and water-induced disaster management. Through its policies, standards, programmes and network of 24 divisional and sub-divisional offices, the Ministry aims to improve access to reliable water, irrigation and energy services and contribute to the socio-economic development and resilience of the province.

The relationship between SIP-II and MoWSIE evolved following Nepal's federal restructuring and the transfer of greater responsibilities for irrigation development to provincial and local governments. SIP-II adopted a multi-spheres approach involving the federal, provincial and local governments, with a particular focus on Koshi Province. A Memorandum of Understanding (MoU) was signed between SIP II and MoWSIE for financing, coordination, institutional strengthening, technical knowledge sharing and promoting the sustainability of small-irrigation systems and approaches.

A significant step toward institutionalizing SIP-II's knowledge and systems within the provincial government was the initiative to establish the SIP-II Management Information System (MIS) server and data-management system at MoWSIE, reflecting the programme's efforts to ensure that knowledge, information and institutional systems developed under SIP-II could be sustained beyond the programme period.

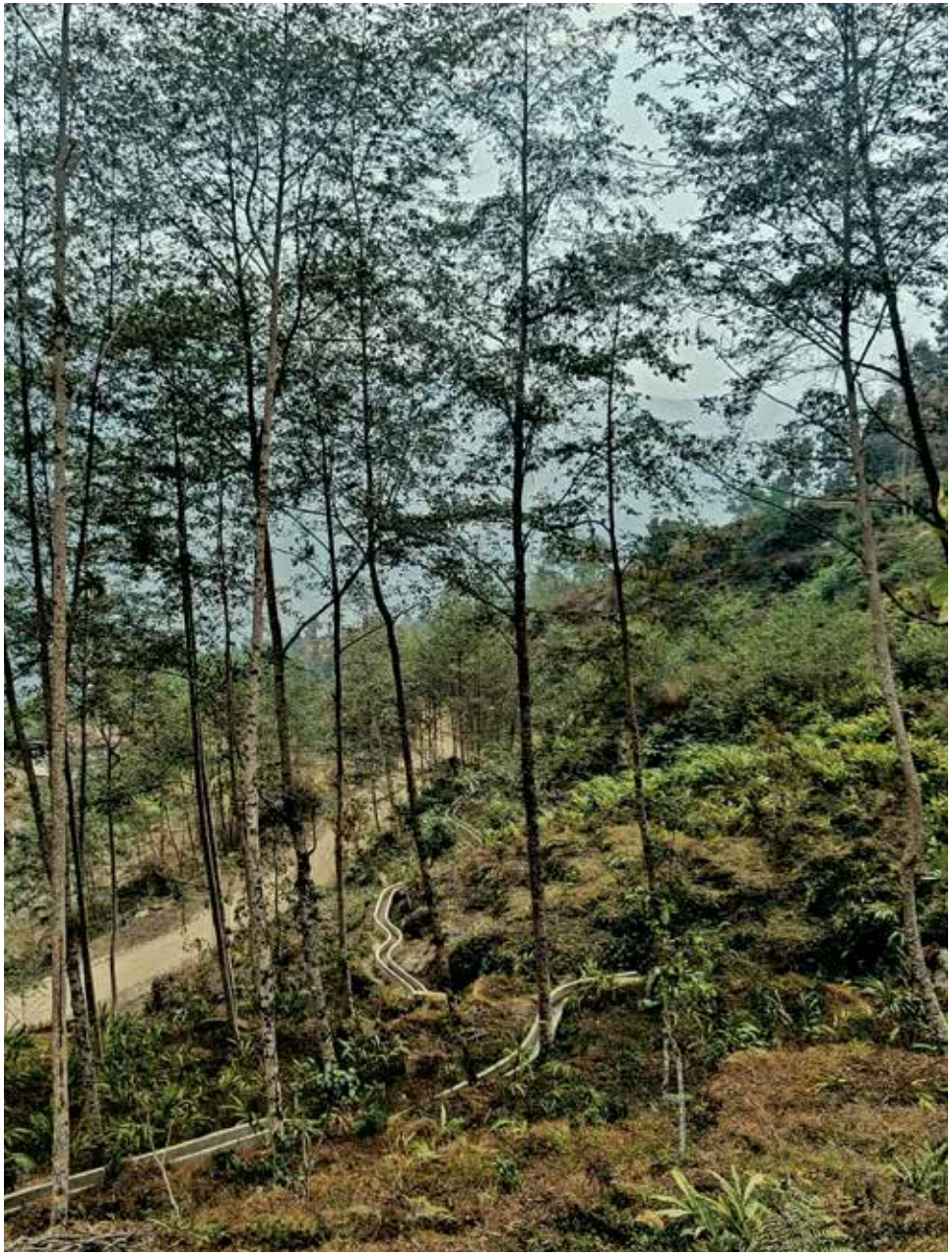


RURAL AND URBAN MUNICIPALITIES

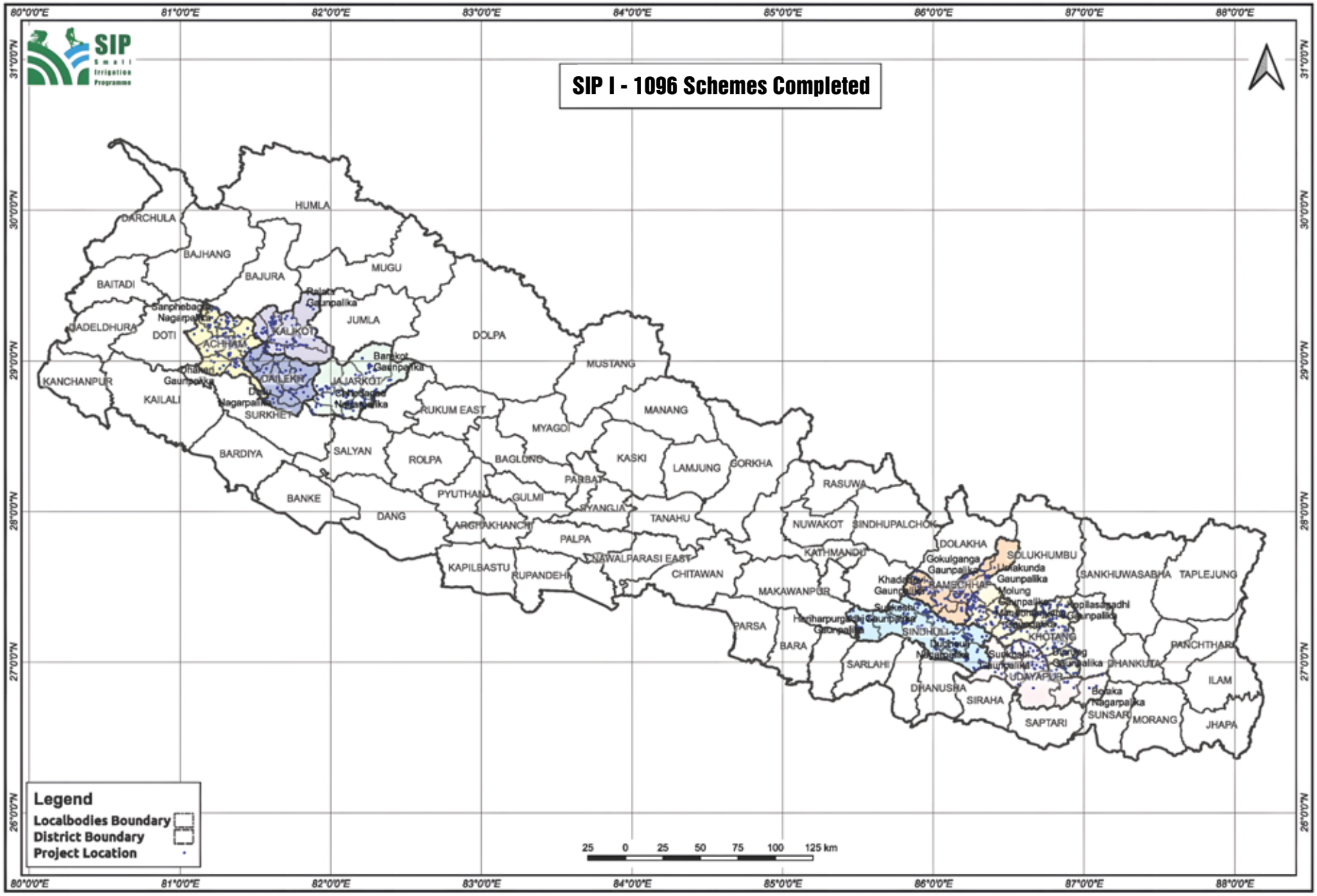
Koshi Province has 137 local governments, comprising 46 urban municipalities and 88 rural municipalities, in addition to one metropolitan city and two sub-metropolitan cities. Of these, 67 LGs are located in the eight mid-hill districts of the province. In accordance with the constitutional provisions under Nepal's federal system, LGs have the mandate to plan and implement small-scale irrigation programmes within their jurisdictions. Following the promulgation of the Constitution in 2015 and Nepal's transition to federalism, the SDC adopted a strategy of engaging in all three spheres of government—federal, provincial and local—for development cooperation. As small irrigation became primarily a responsibility of LGs, the SIP-II was designed to work through LGs. Consequently, the partnership between SDC and the 59 participating LGs in Koshi Province was established primarily through SIP-II.

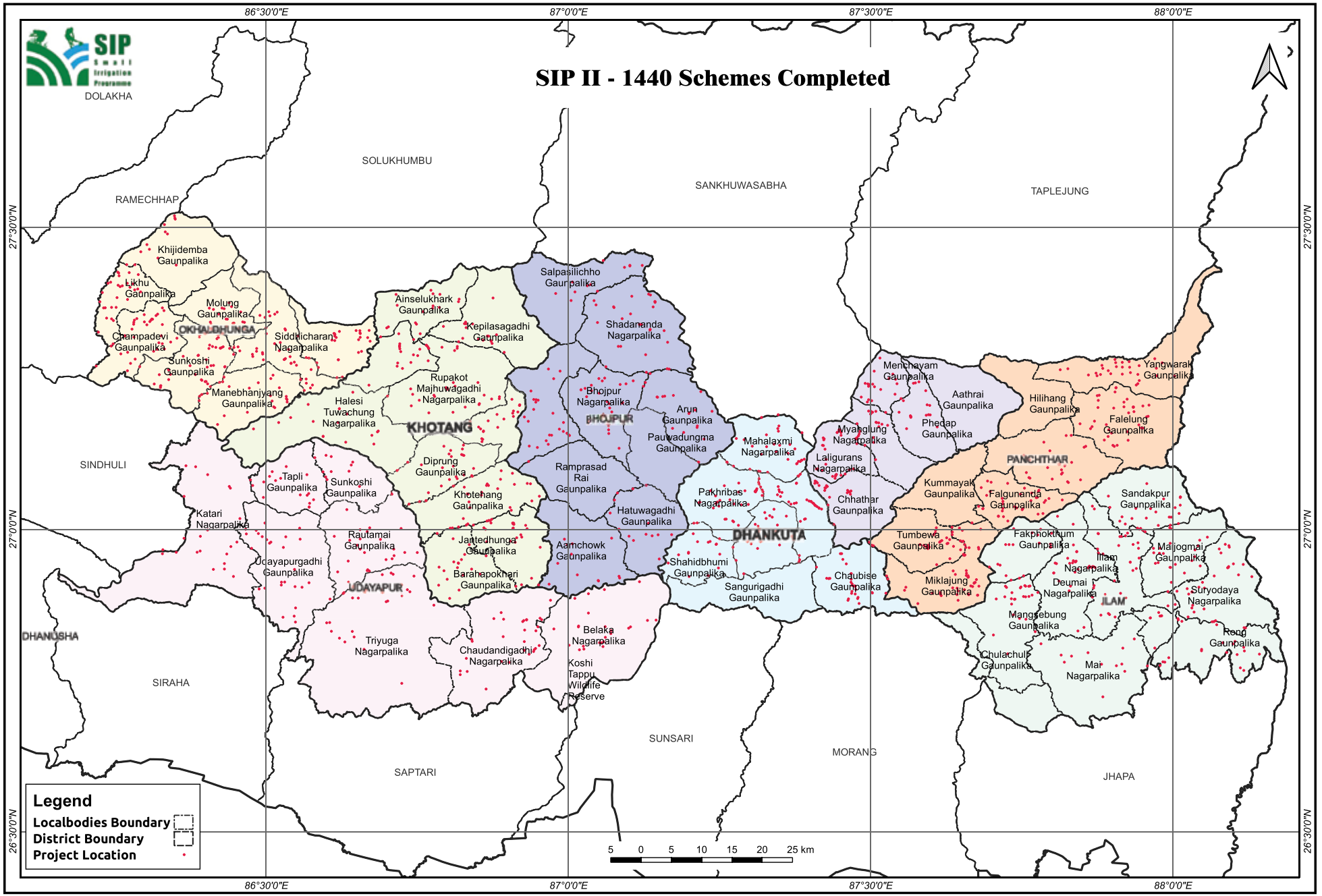
SIP-II subsequently signed on MOU with the participating LGs to strengthen their capacity to respond to farmers' irrigation needs. Through technical assistance, capacity development and institutional support, the Programme enabled LGs to improve the planning, implementation and management of small irrigation schemes and assume greater responsibility for sustainable service delivery. The Programme also supported LGs in facilitating agricultural advisory services and strengthening linkages between irrigated farmers and relevant agricultural market and service providers. This approach contributed to strengthening local ownership and institutional capacity for sustainable small-irrigation development under Nepal's federal governance system.








SIP
Small Irrigation Programme
SIP I - 1096 Schemes Completed
HUMLA
DARCHULA
BAJHANG
BAJURA
MUGU
BAITADI
JUMLA
DOLPA
DADELDHURA
DOTI
ACHHAM
KALIKOT
MUSTANG
KANCHANPUR
KAILALI
DAILEKH
JAJARKOT
SURKHET
RUKUM EAST
MANANG
MYAGDI
BARDIYA
SALYAN
ROLPA
BAGLUNG
KASKI
LAMJUNG
GORKHA
PARBAT
RASUWA
BANKE
PYUTHAN
GULMI
SYANGJA
TANAHU
NUWAKOT
SINDHUPALCHOK
DANG
ARGHAKHANCHI
PALPA
DOLAKHA
KATHMANDU
NAWALPARASI EAST
KAPILBASTU
RUPANDEHI
CHITAWAN
SOLUKHUMBU
SANKHUWASABHA
TAPLEJUNG
MAKAWANPUR
RAMECHHAP
KHOTANG
PARSA
SINDHULI
BARA
SARLAHI
PANCHTHAR
ILAM
DHANUSHA
SIRAHA
SAPTARI
SUNSARI
MORANG
JHAPA
Legend
Localbodies Boundary
District Boundary
Project Location
25 0 25 50 75 100 125 km
80°0'0"E
81°0'0"E
82°0'0"E
83°0'0"E
84°0'0"E
85°0'0"E
86°0'0"E
87°0'0"E
88°0'0"E
31°0'0"N
30°0'0"N
29°0'0"N
28°0'0"N
27°0'0"N
26°0'0"N


SIP II - 1440 Schemes Completed
SIP
Small Irrigation Programme
86°30'0"E
87°0'0"E
87°30'0"E
88°0'0"E
27°30'0"N
27°0'0"N
26°30'0"N
DOLAKHA
SOLUKHUMBU
SANKHUWASABHA
TAPLEJUNG
RAMECHHAP
SINDHULI
DHANUSHA
SIRAHA
SAPTARI
SUNSARI
MORANG
JHAPA
KHOTANG
BHOJPUR
DHANKUTA
PANCHTHAR
ILAM
UDAYAPUR
Khijidemba Gaunpalika
Likhu Gaunpalika
Molung Gaunpalika
Champadevi Gaunpalika
OKHALDHUNGA
Siddhicharan Nagarpalika
Sunkoshi Gaunpalika
Manebhanjyang Gaunpalika
Halesi Tuwachung Nagarpalika
Ainselukhark Gaunpalika
Kepilasagadhi Gaunpalika
Rupakot Majhuwagadhi Nagarpalika
Diprung Gaunpalika
Khotehang Gaunpalika
Tapli Gaunpalika
Sunkoshi Gaunpalika
Katari Nagarpalika
Rautamai Gaunpalika
Udayapurgadhi Gaunpalika
Jantedhunga Gaunpalika
Barahapokhari Gaunpalika
Triyuga Nagarpalika
Chaudandigadhi Nagarpalika
Salpasilichho Gaunpalika
Shadananda Nagarpalika
Bhojpur Nagarpalika
Arun Gaunpalika
Pauwadungma Gaunpalika
Ramprasad Rai Gaunpalika
Hatuwagadhi Gaunpalika
Aamchowk Gaunpalika
Belaka Nagarpalika
Koshi Tappu Wildlife Reserve
Mahalaxmi Nagarpalika
Pakhribas Nagarpalika
Shahidbhumi Gaunpalika
Sangurigadhi Gaunpalika
Menchayam Gaunpalika
Aathrai Gaunpalika
Phedap Gaunpalika
Myanglung Nagarpalika
Laligurans Nagarpalika
Chhathar Gaunpalika
Chaubise Gaunpalika
Yangwarak Gaunpalika
Hilihang Gaunpalika
Falelung Gaunpalika
Kummayak Gaunpalika
Falgunanda Gaunpalika
Tumbewa Gaunpalika
Miklajung Gaunpalika
Sandakpur Gaunpalika
Fakphokthum Gaunpalika
Maijogmai Gaunpalika
Ilam Nagarpalika
Deumai Nagarpalika
Suryodaya Nagarpalika
Mangsebung Gaunpalika
Rong Gaunpalika
Chulachuli Gaunpalika
Mai Nagarpalika
Legend
Localbodies Boundary
District Boundary
Project Location
5 0 5 10 15 20 25 km

Steering and Coordination

PROGRAMME ADVISORY COMMITTEE (PAC)

PAC is SIP's federal advisory body, chaired by the Secretary of the MoID with the Ambassador of Switzerland as co-chair. Its membership draws in the National Planning Commission, the Ministry of Finance, the Ministry of Energy, Water Resources and Irrigation (MoEWRI), the Ministry of Agriculture and Livestock Development, DoLID, and SDC, with the Senior Divisional Engineer of DoLID serving as member-secretary and the PMISC Team Leader attending as a permanent invitee.

PAC's function is inter-ministerial coordination: it follows up and monitors the annual budget and work plan, based on PCC's recommendations, to finance the schemes decided by Project Implementation Committee (PIC). In practice this means PAC is the forum where sector ministries at the federal level; planning, finance, water resources, agriculture; align on SIP's budget and policy footing, so that decision is taken locally (PIC) and provincially (PCC) are matched by consistent federal support rather than requiring separate bilateral consultations between the programme and each ministry.



Fifth Programme Advisory Committee (PAC) Meeting held on 17th July 2026 at MoID, Kathmandu; The PAC convenes federal stakeholders for approval of annual report, and SIP II phase out plan

PROGRAMME COORDINATION COMMITTEE (PCC)

The PCC is SIP's principal provincial governance body. It is chaired by the MoWSIE Minister, with the Ambassador of Switzerland (or nominated representative) as vice-chair; a pairing that reflects the joint ownership of the bilateral programme by the Government of Nepal and the Government of Switzerland at the level where the conditional grant is actually allocated. Its membership brings together DoLID, the provincial ministries responsible for industry, agriculture & cooperatives, economic affairs & planning, two elected Local Government chairs and two women deputy chairs, and representatives of the SDC; the Chief of IEDD; who also leads the Programme Coordination Unit (PCU) as Programme Coordinator; serves as member-secretary.

Meeting at least once a year, before the close of each fiscal year, PCC's core function is to turn programme performance into forward decisions: it reviews the Yearly Plan of Operations and Annual Progress Reports, endorses the PCU's annual plan and budget, decides on the provincial conditional grant to LG , addresses policy issues raised from the field, and liaises with Project Advisory Committee (PAC) on matters that need federal attention. Direct LG representation on the committee; rather than representation through an intermediary layer; gave PCC both the political authority to unlock budget and enough field-level grounding to keep its decisions connected to implementation reality, which is what allowed it to function as an accountability mechanism rather than a purely ceremonial oversight body.



Fifth Programme Coordination Committee (PCC) Meeting of SIP held at MoWSIE, Biratnagar on 18th May 2025, Members of the PCC review SIP II's annual progress and work plan.

PROJECT IMPLEMENTATION COMMITTEE (PIC)

PIC operates at LG level; the point where committee oversight meets construction, WUA formation and beneficiary engagement. It is chaired by the LG Chair, with the LG's Agriculture Development Committee representative, Chief Administrative Officer, Chief of IDEMS and a PMISC focal person as members, and the Programme and Planning Officer as member-secretary. It meets at least twice a year and can invite technical experts or stakeholders as required.

Its role is to endorse the annual plan and budget at local level, review and assess progress, and resolve implementation issues before they require referral upward. This gives PIC a direct two-way link with the higher committees: its endorsed plans and identified issues feed into PCC's provincial budget and policy decisions, while the strategic guidance PCC and PAC issue is operationalized through PIC and the LG sections beneath it; IDEMS, EDS and ADC. PIC is, in that sense, the institutional hinge between the programme's committee structure and the WUAs and beneficiary farmers it ultimately serves.



Programme Implementation Committee (PIC) Meeting at Ilam Municipality in Ilam; The PIC reviews local-level implementation progress

Institutional Relationships and Coordination Mechanism

SIP's coordination mechanism works less like a chain of command and more like a two-way circulatory system. Policy direction and financing decisions flow down through five institutional levels; field evidence, progress and implementation issues flow back up the same path. Two structural shortcuts; shared leadership across committees and a standing technical-assistance channel that runs alongside them; keep that circulation fast rather than bureaucratic. The diagram below traces both directions of movement; the narrative that follows reads it level by level.



Figure: How direction, evidence and decisions move through SIP's institutional structure.

Direction flows down from a single starting point: the bilateral agreement between the Government of Nepal (Ministry of Finance) and the Government of Switzerland, which sets SIP's mandate and financing envelope. DoLID converts that mandate into technical norms and standards; the National Planning Commission converts it into budget ceilings. From there, oversight splits by level rather than duplicating itself; PAC holds federal, cross-ministerial alignment and annual budget oversight, while PCC turns that into a provincial conditional-grant decision and guidance specific to its Local Governments. The PCU, hosted within IEDD, translates PCC's guidance into annual work plans and budgets; Local Governments through PIC, IDEMS, EDS and ADC turn those plans into approved schemes, contracts and technical support on the ground, which WUAs and beneficiary farmers then build, operate and maintain.

Evidence flows back up the same path, not a separate one. Design questions, procurement issues, WUA capacity gaps and disputes surface first at Local Government level, are channeled through the PCU and PMISC's Palika Support Units, and reach PCC as endorsed local plans and physical/financial progress reports. Where an issue is genuinely cross-ministerial or a matter of national policy, PCC escalates it to PAC. This is what makes the committees an accountability mechanism rather than a reporting formality: a problem identified by a WUA can, in principle, reach federal attention within the same structure that issued the original guidance.

Continuous technical assistance runs alongside the committee structure, not through it. PMISC supports the PCU at provincial level and Local Governments directly through Palika Support Units; a standing source of technical capacity that does not wait for a PAC, PCC or PIC meeting to be available. This parallel channel is what keeps day-to-day implementation moving between committee cycles.

Shared leadership is the mechanism's shortcut. The same Local Government Chairs who sit on PCC also chair PIC. That single overlap turns what would otherwise be a multi-step reporting line-Local Government to province, province back to Local Government-into a direct seat at both tables, shortening the distance between provincial decision-making and local delivery.

Throughout, decentralized implementation is supported rather than substituted for. Because Local Governments hold constitutional responsibility for local infrastructure, the entire structure above is built around their authority rather than in place of it: LG Councils approve schemes, IDEMS carries technical responsibility, and PIC resolves routine implementation issues locally; reserving PCC and PAC attention for the budget, policy and cross-ministerial matters that genuinely need it

.

Institutional Legacy SIP's institutional arrangement was, at its core, a decision to work through government systems rather than around them; federal ministries, a provincial coordinating agency, and Local Governments with constitutional responsibility for local infrastructure; with committees and technical assistance built to support that structure rather than substitute for it. Several features of this arrangement are worth carrying beyond the life of the programme.

> “A problem identified by a Water Users' Association can reach federal attention through the same structure that issued the original guidance - because the path runs both ways.”

> “The same Local Government Chairs who sit on PCC also chair PIC; turning a reporting line into a seat at the table.”

Implementation Mechanism

SIP delivers irrigation infrastructure and builds local institutions through a single, structured instrument: a four-stage Project Cycle that carries every scheme from initial identification to fully devolved, community-run operation.

Rather than treating infrastructure delivery and institution-building as separate work streams, the cycle deliberately interleaves them at every stage, so that irrigation assets and the local capacities required to sustain them mature in step with one another. This integrated, sequenced design constitutes SIP's principal implementation mechanism, and it is among the programme's most transferable legacies for Nepal's federal irrigation sub-sector; a template for how infrastructure investment can be made to build the state as it builds the scheme.

Conceptually, the cycle operates as a graduated transfer of responsibility. At Stage 1, leadership sits with the province and Local Government (LG), supported by the Programme Management and Implementation Support Consultant (PMISC) and the LG's Infrastructure Development and Environmental Management Section (IDEMS). Across Stages 2 to 4, functional authority is progressively handed to the Water Users' Association (WUA); first as an institutional counterpart, then as an executing agency for construction, and finally as the self-governing custodian of O&M, water allocation and agricultural performance. The LG's role shifts correspondingly, from direct implementer to technical and fiduciary authority, and ultimately to the steward of a functioning WUA operating within regular local-government systems. This progression mirrors, and actively reinforces, Nepal's wider federalism and devolution agenda: it is a working model of subsidiarity, in which decisions and responsibilities are held at the most local level capable of exercising them well.

Stage	Institutional focus	Locus of leadership	Defining shift
1 · Project Preparation	Scheme targeting, technical/social verification, and integration into LG planning and budgeting	Local Government, with PMISC / IDEMS technical facilitation	From ad-hoc community proposals to institutionally endorsed, budgeted schemes
2 · Institutional Development	WUA formation, registration and constitution; WUA–LG agreement on roles and financing	Ad-hoc water user committee maturing into an elected WUA	From informal user groups to legally registered, accountable local institutions
3 · Construction completion and market linkage	WUA-executed construction under LG fiduciary and technical oversight, with mentored quality assurance	WUA as executing agency; LG as fiduciary and technical authority	From programme-managed to community-managed construction
4 · Post construction and Sustainability	O&M capacity-building, agricultural intensification and market linkage, full functional transfer to WUAs	WUA assumes operating responsibility; LG embeds continuing oversight and agriculture advisory services	From project-supported to self-governing, government-anchored systems



CARRYING THE WORK FORWARD

SIP worked through government planning and budgeting systems, with responsibilities shared across federal, provincial and local institutions. Joint implementation, public hearings and audits strengthened practical experience in managing schemes and accounting for decisions and expenditure. The skills, procedures, maintenance arrangements and records developed through this work provide a basis for continued irrigation management. Documenting this experience also allows lessons from SIP to inform future programmes and government investment.







STAGE 1: PROJECT IDENTIFICATION, SCHEME VERIFICATION & PROJECT PREPARATION.



1.1 The province government, with support from the Programme Management and Implementation Support Consultant (PMISC), selects programme Local Governments (LGs) based on accessibility, land suitability and waterresources, while clarifying the respective roles of federal, provincial and local institutions in programme delivery.



1.2 The LG identifies and registers irrigation schemes proposed by ad-hoc water user committees, farmers and local stakeholders, while assessing institutional readiness, stakeholder representation and pportunities for private-sector engagement.



1.3 The LG, with support from the PMISC Palika Support Unit, screens and prioritizes schemes based on irrigation potential, agriculture opportunities, markets and programme criteria, using transparent and participatory decision-making processes.



1.4 The Infrastructure Development and Environmental Management Section (IDEMS) of LGs, with support from the PMISC Palika Support Unit, verifies schemes on-site to assess water availability, technical feasibility, social viability, agriculture potential and the capacity of local institutions to manage the investment.



1.5 LG council endorses priority schemes and secures implementation commitment, including institutional responsibilities, budget provisions, coordination arrangements and compliance with applicable government policies and procedures.



1.6 IDEMS, with support from the PMISC Palika Support Unit, prepares PPRs through participatory survey and design, including GPS walkthrough, farmer consultation, BoQ and cost estimates, while building the technical capacity of LG staff through hands-on planning and design.



1.7 LG reviews, approves and integrates PPRs into the LG annual plan and budget, while strengthening linkages with provincial/ federal planning systems and documenting lessons, institutional gaps and capacity-development needs for subsequent stages.

STAGE 2: WUA INSTITUTIONAL DEVELOPMENT AND FARM WATER MANAGEMENT



2.1 The ad-hoc water user committee, with support from IDEMS and the PMISC Palika Support Unit, forms and strengthens the Water Users' Association (WUA), including membership, leadership, representative governance and inclusive participation.

2.1 The ad-hoc water user committee, with support from IDEMS and the PMISC Palika Support Unit, develops the WUA constitution, bylaws and operational rules, aligned with applicable government provisions and clear WUA–LG roles.

2.3 The ad-hoc water user committee, with support from IDEMS and the PMISC Palika Support Unit, conducts WUA registration, elections, public hearing and accountability processes, strengthening local institutions for transparent and democratic service





2.4 The elected WUA mobilizes beneficiary contributions for investment and O&M, including establishment of the O&M fund, while receiving capacity development on financial management, procurement, record keeping and accountability.



2.5 DEMS, with support from the PMISC Palika Support Unit, facilitates the Agreement between WUA and LG defining responsibilities, activities, financing, reporting, O&M and coordination arrangements, reinforcing appropriate roles at each level of government.



2.6 LG strengthens its institutional capacity to support irrigated agriculture and WUA development, including preparation of agriculture development plans, farm water management and relevant technical/ extension training; provincial and other government actors are engaged where their mandates add value.

2.7 DEMS, with support from the PMISC Palika Support Unit, provides Construction Management and Quality Control (CMQC) and Institutional Development (ID) orientation before construction, including capacitybuilding for LG staff, WUAs and relevant local/ private-sector service providers.

STAGE 3: CONSTRUCTION, COMPLETION & MARKET LINKAGE



3.1 WUA mobilizes community/beneficiary contributions and collects local construction materials, strengthening collective action, financial discipline and community-level implementation capacity.



3.2 LG provides construction advance to WUA upon the recommendation of IDEMS to procure required foreign construction materials, while strengthening LG systems for financial management, fiduciary oversight and timely decision-making.

3.3 WUA constructs irrigation infrastructure with support from IDEMS and PMISC Palika Support Unit, adhering to quality standards, inclusion safeguards and agreed institutional responsibilities; local vendors, suppliers and other private-sector actors are engaged where appropriate.





3.5 LG ensures transparency and accountability through hoarding boards, public reviews and audits,strengthening downward accountability and the use of local government systems.



3.6 LG tests, commissions and certifies completed works, including verification of design flow and irrigated area, and formally records asset ownership, institutional responsibilities, O&M arrangements and handover requirements.

3.4 IDEMS, with support from the PMISC Palika Support Unit, monitors construction progress and quality, including measurement and running bills, while mentoring LG technical staff to progressively take full responsibility for supervision and quality assurance.

3.7 LG facilitates agriculture input and market linkages, including input providers, buyers/traders and market information systems, while building the capacity of farmers, LGs and relevant private-sector actors to sustain commercial linkages beyond project support.

STAGE 4: O&M, AGRICULTURE DEVELOPMENT & POST-CONSTRUCTION SUPPORT



4.1 DEMS trains WUAs on Operation and Maintenance (O&M) of irrigation systems and water management, while strengthening LG capacity to provide continuing technical oversight and support.



4.2 IDEMS, with support from the PMISC Palika Support Unit, prepares Integrated Crop Water Management (ICWM) and System Operational Plans, including water allocation and low-flow management, and links these plans with relevant LG agriculture and water-management functions

4.3 The Economic Development Section (EDS) of the LG strengthens irrigated agriculture through extension services, improved practices and commercial crop promotion, while facilitating linkages with provincial/federal programmes and private-sector service and market actors.

4.4 LG facilitates farmer-to-farmer learning and market linkages and supports institutional networks among WUAs, farmer groups, cooperatives, service providers, buyers and traders to sustain benefits after project closure.



4.5 IDEMS, with support from the PMISC Palika Support Unit, monitors crop productivity and irrigation performance through crop-cut surveys and post-construction monitoring, and strengthens LG systems for data use, learning and evidence-based planning



4.6 LG provides continued agriculture and institutional support for at least two years after construction, progressively embedding technical, financial, O&M and monitoring functions within regular LG systems and strengthening coordination with provincial and federal institutions.



4.7 LG transfers full responsibility to WUAs for annual O&M, agriculture planning, performance monitoring and financial accountability, with clear escalation and support arrangements across LG, provincial and federal levels and continued engagement of private-sector actors where relevant.



Photo By T. Gregoire



CHAPTER 3

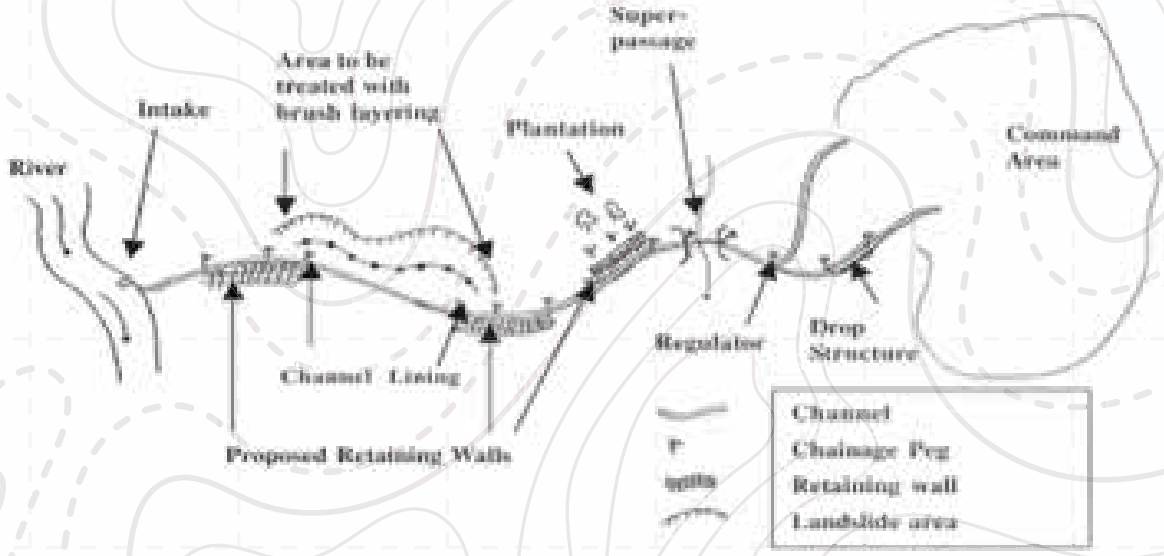
TECHNICAL SPECIFICATIONS

SIP-II promoted appropriate, cost-effective and locally maintainable technical solutions for the development and rehabilitation of small irrigation systems, with particular emphasis on gravity-fed systems suited to the hilly terrain of Koshi Province. A typical hill irrigation system comprised intake/headworks, gravel and sand traps, conveyance canals or HDPE pipelines, cross-drainage and drop structures, regulators, proportional flow dividers, escape structures and field outlets. Technical designs emphasized safe conveyance, sediment management, erosion control, drainage and efficient water distribution, while ensuring resilience to floods, landslides and monsoon conditions. Construction materials—including dry stone, dressed and random rubble masonry, concrete/RCC and HDPE pipes—were selected based on hydraulic requirements, local availability, cost, transportation constraints and the capacity of local communities to operate and maintain the infrastructure. Overall, SIP-II's technical approach sought to balance hydraulic performance, durability, affordability and local maintainability, while adapting irrigation infrastructure to the diverse and challenging terrain of the hill districts.

GRAVITY FLOW AND OTHER FORMS OF IRRIGATION

Small irrigation systems apply water by surface (gravity flow), sprinkler, or drip irrigation. Gravity-fed, run-of-the-river schemes dominate in hill Nepal, since gravity needs no energy input and suits the steep, contour-canal layout typical of hill terrain. Water is diverted at an intake/headworks, passed through a gravel and sand trap, and carried by gravity to the field via basin, furrow or border irrigation.

Surface irrigation (known as gravity flow) - water flows by gravity from a diversion (headwork/intake) on a river or stream through a canal network to the field, applied as basin, furrow or border irrigation. Gravity-fed, run-of-the-river schemes are by far the most common form of hill irrigation in Nepal, since gravity conveyance needs no energy input and matches the steep, canal-along-the-contour layout typical of hill terrain.



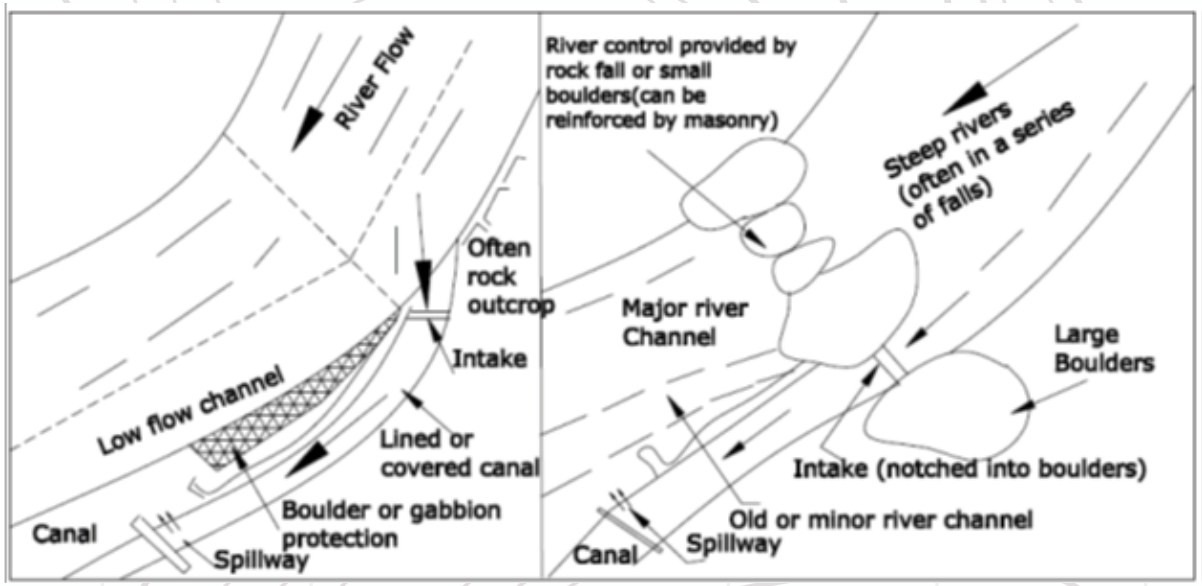
COMPONENTS OF A HILL IRRIGATION CANAL SYSTEM

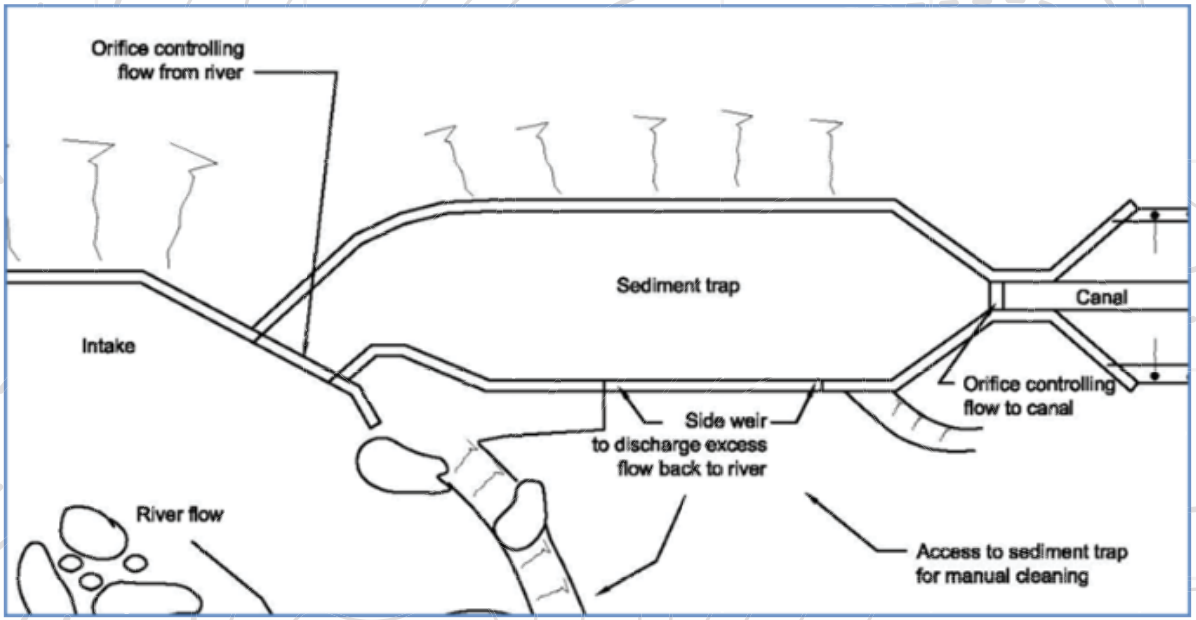
A gravity hill irrigation system is built up from a standard set of structures, from the river source to the field. The below table summarizes the main components, in the order water passes through them.

Component	Function	Typical location
a. Intake / headwork	Diversion:Diverts a design share of river flow into the system while excluding flood flow and bed load; sited on a stable reach, ideally the outside of a bend or just downstream of a confluence.	Head of system
	Gravel Trap: Removes coarse bed material (gravel, cobbles) immediately after the intake by keeping velocity below the value needed to keep that material moving.	Just below intake
	Sand Trap/ Settling Basin: Settles suspended sand out of the flow before it reaches the canal, via an inlet, settling and outlet zone.	Below gravel trap
b. Conveyance canal (open, lined, covered or piped)	Carries water from intake to the command area; open, lined, covered or piped depending on terrain, seepage risk and land availability.	Along the alignment
c. Cross-drainage structure	Carries the canal safely across natural drainage lines that intersect its alignment. (aqueduct, siphon, super-passage, culvert, level crossing, or HDPE pipe crossing)	At gully / stream crossings
d. Drop structure (vertical drop, chute, pipe drop)	Dissipates excess fall where ground slope is steeper than the canal gradient, preventing bed erosion.	Steep reaches
e. Head / cross regulator	Controls or diverts flow at a canal offtake; simplified or omitted in most small hill schemes.	Canal offtakes
f. Flow / proportional divider	Splits flow between branch canals in a fixed ratio, usually without gates, following community water-sharing norms.	Canal bifurcations
g. Escape structure (overflow or gated)	Provides a safe outlet for excess or flood water entering the canal, protecting the downstream section from overtopping.	Vulnerable reaches
h. Outlet (pipe outlet, saancho/plank check)	Delivers water from the canal to field channels; simple pipe outlets and wooden plank checks are standard in hill schemes.	Along command area

INTAKE AND SEDIMENT CONTROL

The intake (or headwork) diverts the design flow from the river into the system. Common types in the hills are the side intake (with or without a stone/brushwood weir or other river control) and the bottom (rack) intake, which draws water through a steel rack set into the riverbed and is well suited to steep, boulder-bed streams. A gravel trap and, where suspended sediment is significant, a sand trap (settling basin) is provided immediately downstream to protect the canal and outlets from siltation and abrasion.





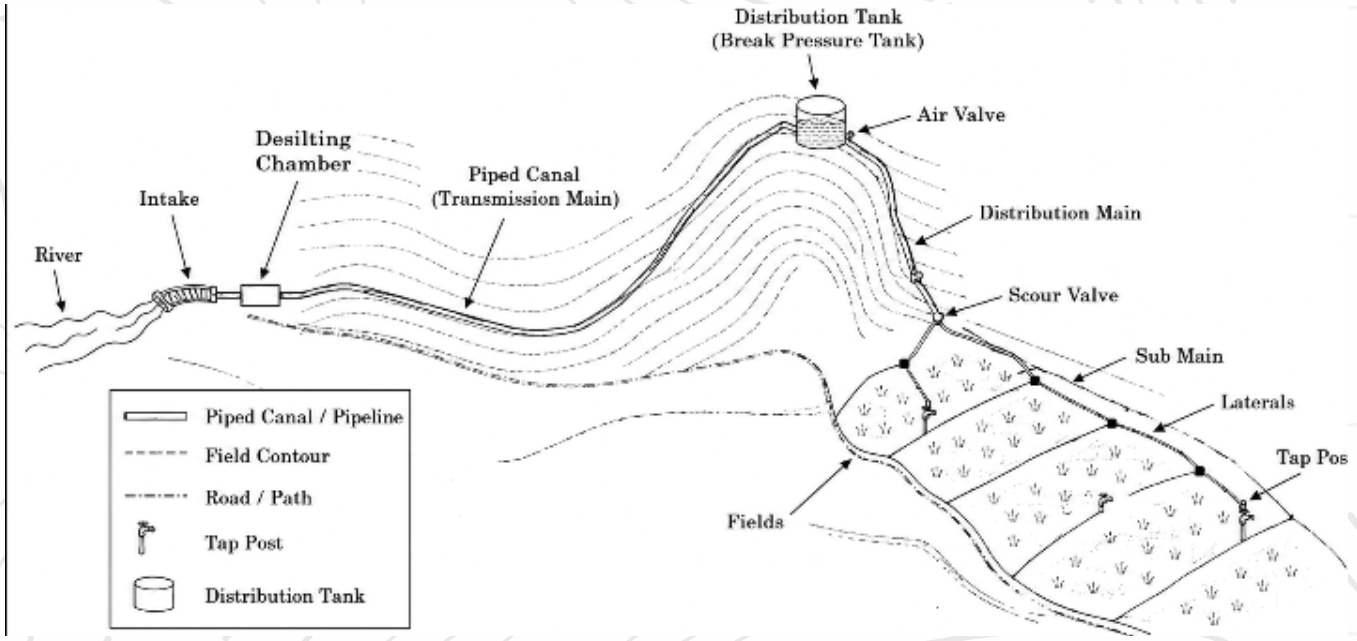
CONVEYANCE CANAL

The canal itself may be unlined (earthen), lined, covered, or piped. Unlined canals are cheapest but limited to modest velocities to avoid scour, and are prone to seepage loss; lining is adopted to control seepage, reduce section size, or protect an unstable alignment. Piped conveyance (commonly HDPE pipe) is increasingly used in the hills for short crossings and for delivering small, reliable dry-season flows without the losses of a wide, monsoon-sized earthen canal.

SIP-II used two conveyance types, chosen by terrain, discharge and O&M capacity:

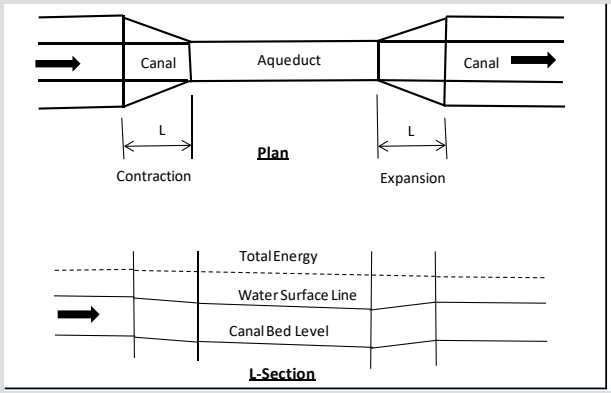
- DSL (double side lined) canal: - an open channel with both side walls and bed lined in RCC. Lining cuts seepage and erosion, reduces weeds and siltation, and allows a smaller, steeper section than an unlined canal, important on unstable slopes. Less desilting and repair means more water reaches tail-end fields.
- HDPE pipe canal: - a closed pipeline, buried or surface-laid, used where terrain is unstable or an open canal would need costly cross-drainage. Being closed, it resists landslide debris, evaporation and seepage loss, and can cross steep or gullied ground more directly. This gives tail-end farmers a more reliable, equitable supply.

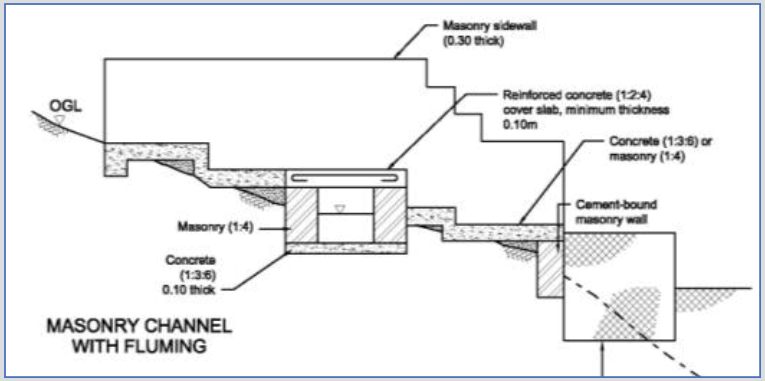
Schemes typically combine both: DSL canal on gentler, stable reaches; HDPE pipe across steep or landslide-prone sections.



CROSS-DRAINAGE STRUCTURES

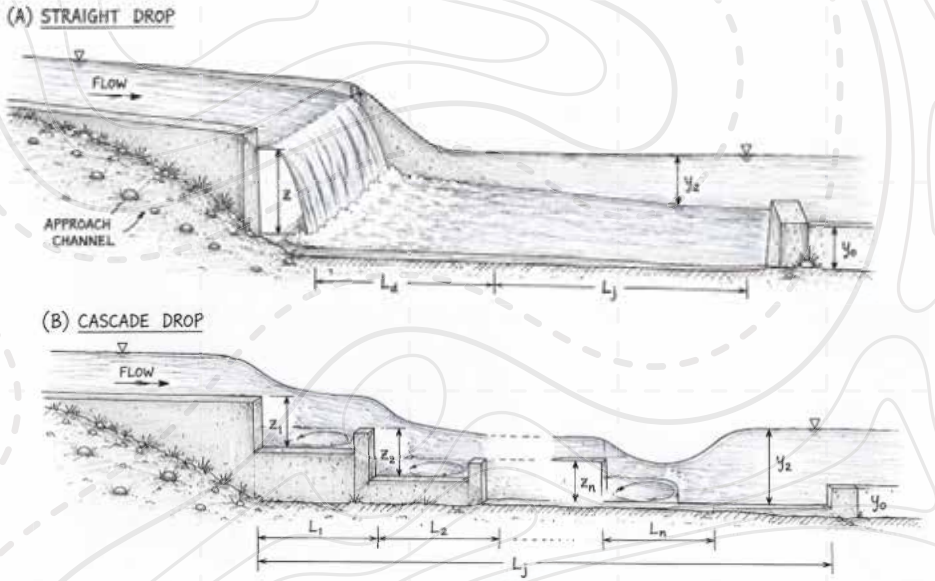
Where the canal alignment crosses a natural drainage line, a cross-drainage structure carries it safely across. The main types are the aqueduct (canal over the drain), super-passage and siphon (canal under the drain), drain culvert (drain under the canal), level crossing (canal and drain cross at the same level), and, in the hills, an HDPE pipe crossing used in the same role as a small aqueduct. Choice of type depends on relative bed levels, flood behavior of the drain, and site topography.





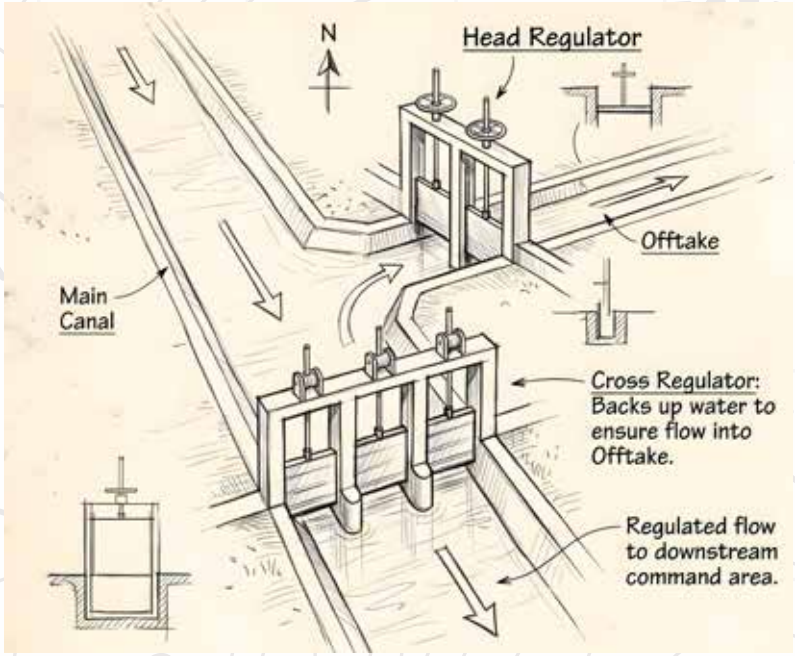
DROP STRUCTURES

Where the ground falls faster than the canal can safely follow, drop structures - vertical drops, chute drops, or pipe drops - step the water down without eroding the bed.



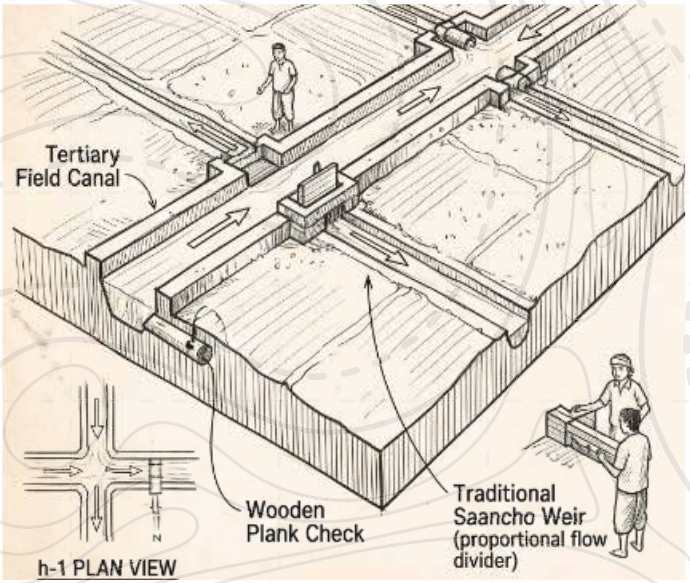
HEAD AND CROSS REGULATORS

Head and cross regulators control how flow is shared between the main canal and its offtakes. Small hill schemes typically simplify or omit gated regulators in favor of ungated proportional dividers that follow established community rules.



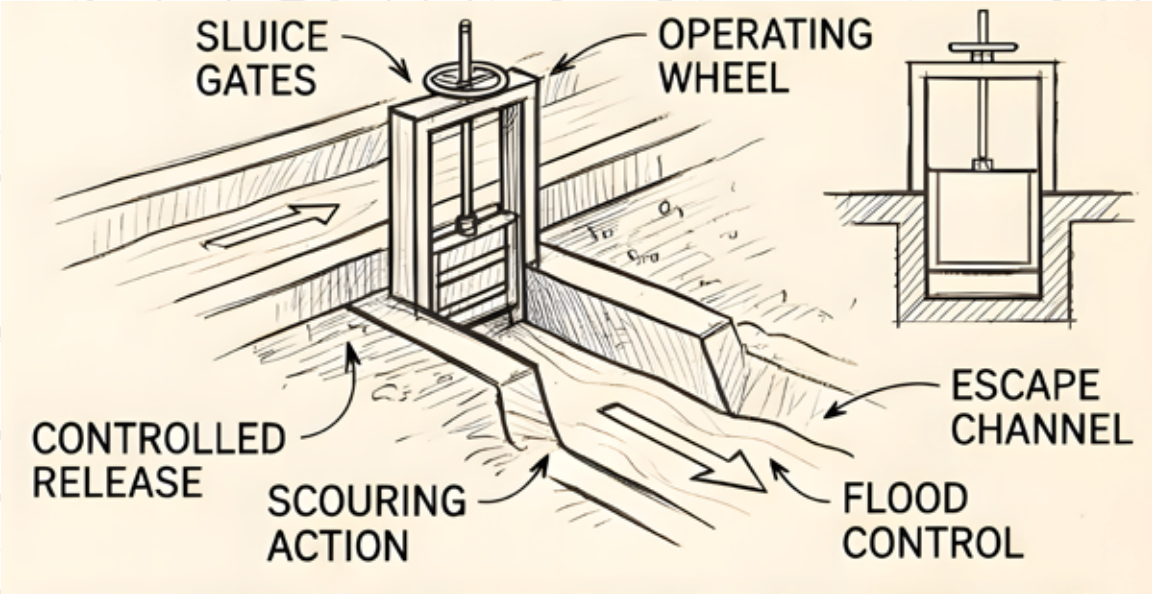
FLOW / PROPORTIONAL DIVIDERS

Proportional dividers split flow between branch canals in a fixed ratio, usually without gates, following established community water-sharing norms the standard approach at canal bifurcations in farmer-managed hill systems.



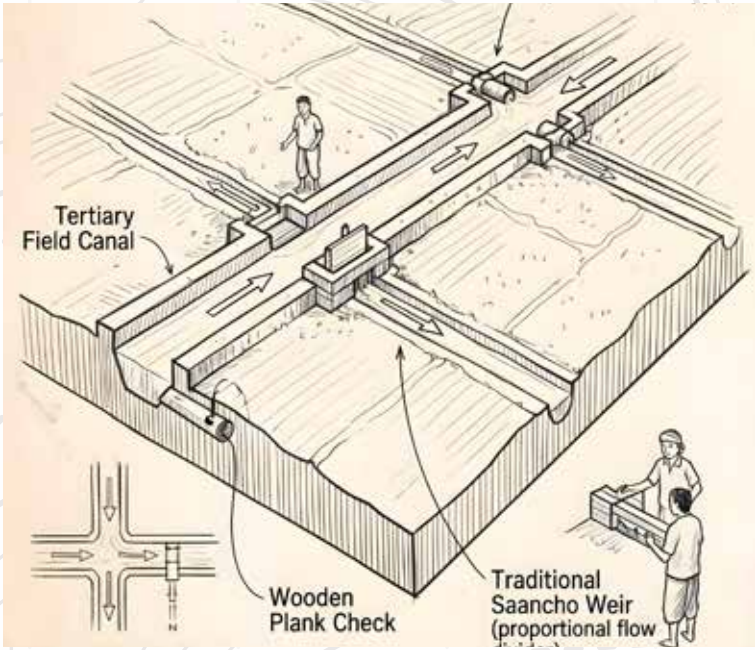
ESCAPE STRUCTURES

Escape structures - overflow or gated - provide a safe release point for flood or surplus water, protecting the canal from over topping caused by landslips or storm inflow.



OUTLETS

At the field level, simple pipe outlets and wooden plank checks, including the traditional sarpanch weir — regulate delivery from the canal to individual farm channels.



MATERIALS USED FOR CANAL CONSTRUCTION

Material choice for lining and structures in hill schemes is governed by local availability, labor skill, cost, and the need for local maintainability, alongside hydraulic performance. Table 2 summarizes common lining materials with their permissible velocity, roughness, and typical thickness.

Lining material	Max. velocity (m/s)	Roughness, n	Typical thickness
Dry stone	1.0	0.025	20–50 cm
Dressed stone masonry	2.0	0.018	20–40 cm
Random rubble (stone) masonry	1.5	0.020	20–50 cm
Plain cement concrete / RCC	2.5	0.015	7.5–15 cm





CHAPTER 4

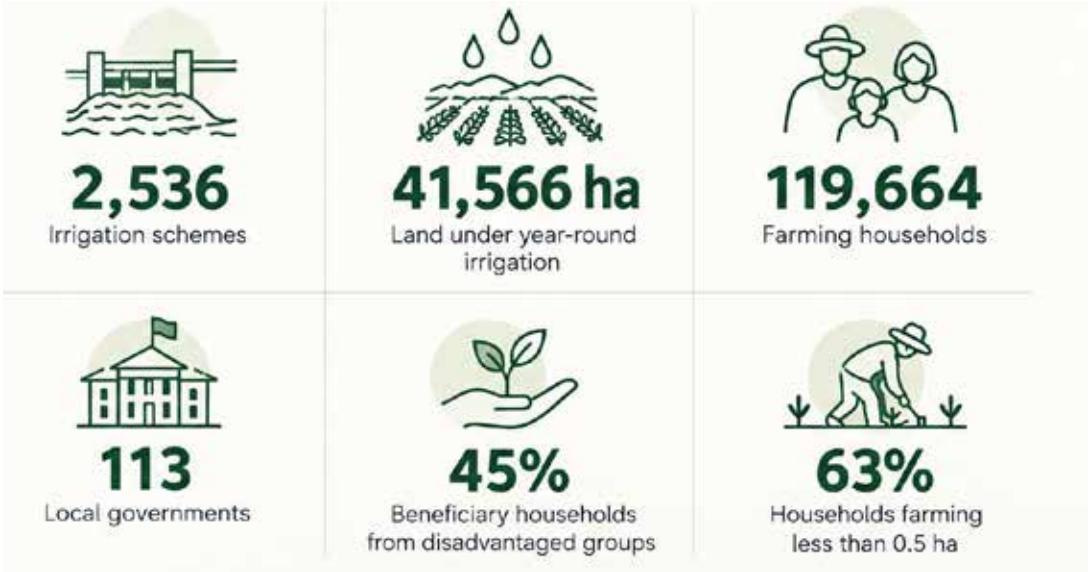
WHAT IRRIGATION CHANGED

TWELVE YEARS OF RESULTS AND LASTING CHANGE

Over twelve years, SIP demonstrated how reliable irrigation could improve farming and livelihoods. This chapter brings together the programmes results and farmers accounts of what changed.

Small Irrigation schemes brought water to fields that had long depended on seasonal rainfall. Farmers could cultivate land more of the year, increase production, diversify into vegetables and higher value crops, and earn more from small plots. Construction provided local employment. Women and DAGs took a greater part in irrigation management, and WUAs assumed responsibility for keeping the systems functioning.

TWELVE YEARS OF RESULTS



WHEN IRRIGATION BECAME RELIABLE

There was lot of empty land," recalls Narayan Bahadur Shrestha, describing the long dry months before irrigation. Many farmers in his area, he says, "could only grow maize and had nothing else to cultivate." Once the monsoon ended, there were few options for putting that land to use.

This was a familiar constraint in programme areas. Farming depended heavily on the monsoon, with maize, millet, paddy and other rainfed crops grown according to the season. A household might have land available for another crop but lack the water to grow it. Dry season cultivation was limited, and fields remain fallow until the next rains.

SIP constructed and rehabilitated small irrigation schemes to improve the supply of water to these fields. In its two phases, the programme cumulatively covered 41,566 hectares with year-round irrigation. This covered 119,664 farming households.

With dependable year round irrigation, farmers had choice about when and what to plant.



Photo By T. Gregoire

HOW ACCESS TO WATER CHANGED FARMING

Before
Rain-dependent agriculture

Rain-dependent cultivation
Farming relies on seasonal rainfall.

Limited dry-season farming
Little or no farming during dry months.

Land left fallow
Fields remain uncultivated for long periods.

Few crop choices
Mainly traditional, rain-fed crops.

After
Reliable irrigation

Year-round cultivation
Farming throughout the year.

More cropping seasons
Multiple harvests each year.

Crop diversification
A wider variety of high-value crops.

Greater production potential
Higher yields and stronger, more resilient livelihoods.



GETTING MORE FROM THE LAND

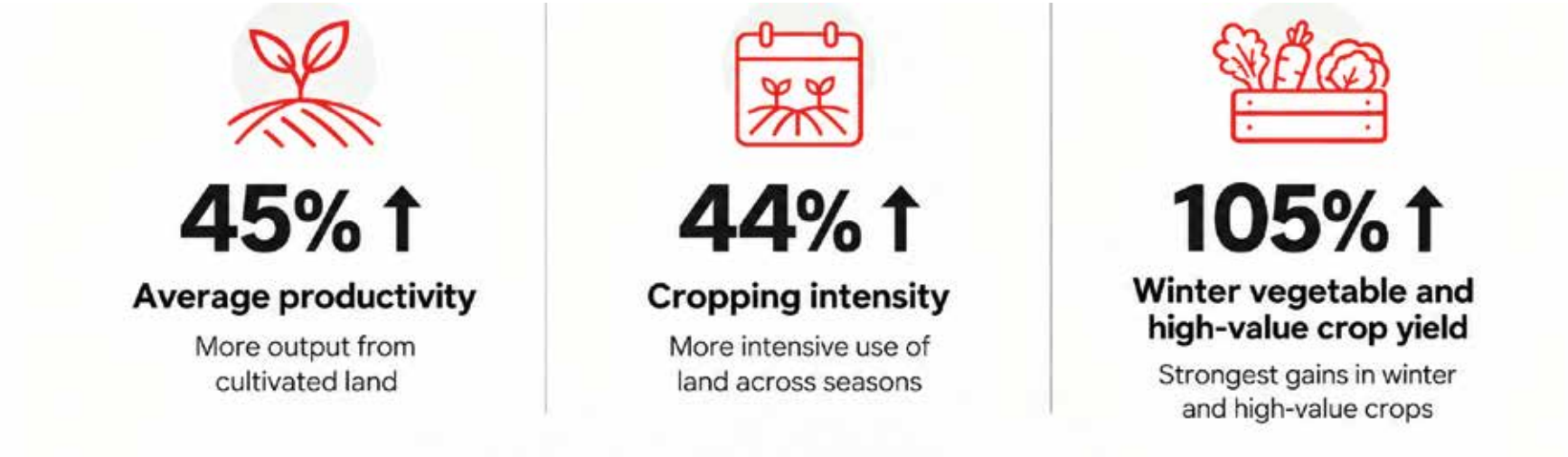
Reliable irrigation let farmers grow crops more consistently, use their land more intensively and cultivate a wider range of crops.

Across the programme, average agricultural productivity rose by 45% and cropping intensity by 44%. Winter vegetables and other high-value crops recorded the largest gains, with yields increasing by an average of 105%.

Fields that once produced only one or two seasonal crops could now grow vegetables, potatoes and spices for household use and sale. Farmers' average agricultural income also rose by 30%.



RELIABLE IRRIGATION ENABLED MORE INTENSIVE AND DIVERSIFIED FARMING



SURPLUS BECAME MARKET OPPORTUNITY

Greater production gave farmers more produce to sell. SIP therefore linked irrigation with agricultural services and markets.

Business-to-business meetings brought WUAs, farmers, traders and service providers together to discuss production, timing, demand and supply. Of 465 WUAs identified as having market potential, 237 took part in these meetings. Across the programme, 54% of farmers reported selling produce directly to markets.

SIP also learned this is one area where WUAs needed further support. Committees had experience in maintaining systems and supporting production but securing bulk buyers and negotiating prices were fewer familiar tasks. The programme helped connect them with private agricultural service providers, agro-vets and market aggregators.

Market access remained one of the areas where progress was more gradual. The programme aimed for a higher proportion of farmers to sell surplus produce directly to markets, but the final achievements was 54%. This experience reinforced an important lesson: irrigation can create production opportunities, but sustained income growth also depends on functioning agricultural services, market information, aggregation, buyers and private sector linkages.


रिचार्ज कार्ड
यहां पाइन्छ ।

EMPLOYMENT BEFORE FIRST HARVEST

The livelihood benefits of SIP began before water reached the fields.

Construction of Irrigation schemes created substantial employment opportunities within participating communities. During SIP II alone, the programme generated approximately 2.08-million-person days of employment, with around CHF 14 million paid to farmers and local workers through employment generated by programme activities.

This meant that irrigation investment produced two forms of economic benefit: immediate income through construction employment, followed by the longer-term productive benefits of year-round irrigation.



Photo By T. Gregoire

IRRIGATION INVESTMENT CREATED IMMEDIATE INCOME OPPORTUNITIES WITHIN PARTICIPATING COMMUNITIES

2.08 million
Person-days of employment

CHF 14 million
Paid through local employment



REACHING SMALLHOLDERS AND DISADVANTAGED FAMILIES

SIP was designed to support smallholder farmers and disadvantaged families. Of the households reached, 45% belonged to disadvantaged groups and 63% farmed less than 0.5 hectares of land.

The programme required women to make up at least 40% of each WUA committee. Each committee also had women or representatives of disadvantaged groups in one of the leadership positions as chair, secretary or treasurer.

Women accounted for 37% of participants in SIP's training programmes in engineering, construction management, quality control and maintenance.

SIP also offered traineeships to fresh women engineering graduates. Across four cohorts, 37 women received mentoring, technical instruction and field placements within the project.

PARTICIPATION IN IRRIGATION ISTITUIONS SUPPORTED GREATER VOICE, REPONSIBILITY AND CONFIDENCE.



INFRASTRUCTURE THAT CONTINUED TO WORK

A completed canal is an output. A canal still delivering water years later is an achievement.

Programme monitoring found that 91% of irrigation schemes remained fully functional after three years of completion, and 99% of WUA had established funds for operation and maintenance.

These results matter because small irrigation infrastructure faces difficult terrain, monsoon damage, sedimentation, landslides and routine wear. Lasting functionality therefore depends not only on sound engineering but on the institutions that inspect, maintain, finance and manage the schemes.

IRRIGATION SCHEMES CONTINUED TO FUNCTION, SUPPORTED BY LOCAL MAINTENANCE ARRANGEMENTS.



91%

Schemes fully functioning three years after completion



99%

Water Users Associations with an operation and maintenance fund

BUILT FOR A CHANGING CLIMATE

SIP included climate checks in scheme design to account for heavy monsoon rains, longer dry spells and unstable slopes. Where hydrological data were limited, designers drew on older residents' knowledge of past floods. Structures such as retaining walls, spillways and storage ponds required careful quality checks. Local workers learned concrete mixing and reinforcement so they could build the canals to the required standard and repair and maintain them when needed.

INSTITUTIONALIZING SMALL IRRIGATION

With SIP's support, all 59 participating LGs developed and adopted Small Irrigation Guidelines. These guidelines set out procedures for planning, financing, constructing and managing small irrigation schemes through local government systems.

Local staff and WUAs can draw on these guidelines and their practical experience to plan new schemes and maintain existing ones beyond the programme.

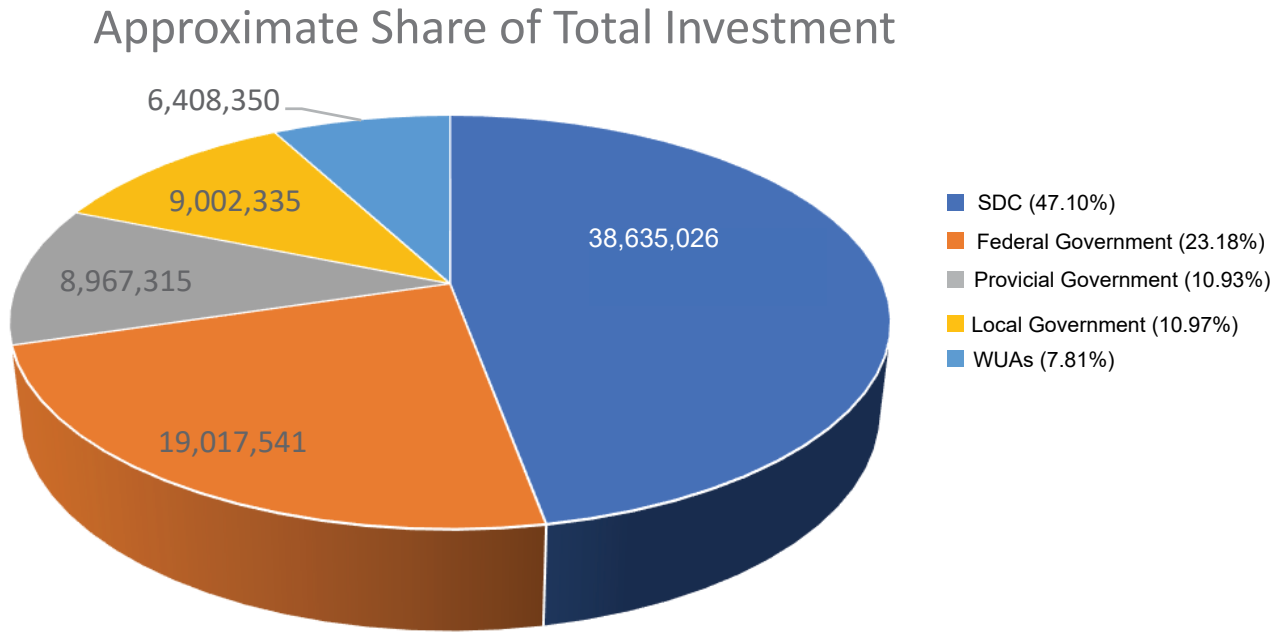




A SHARED INVESTMENT

Across its two phases, approximately CHF 82.03 million was invested in small irrigation. This was not financed by one actor alone. SDC contributed CHF 38.64 million, while federal, provincial and local governments together contributed CHF 36.99 million. WUAs contributed a further CHF 6.41 million.

This financing structure reflects one of SIPs central achievements: small irrigation increasingly became a shared public and community investment rather than a standalone donor intervention.







LESSONS TO CARRY FORWARD

Federalism requires partnership, not simply decentralization. SIP was implemented during a period of significant change in Nepal's governance system. The transition to federalism created opportunities to LGs to take responsibilities for small irrigation, but it also revealed significant differences in institutional capacity, systems and experience. SIPs experience showed that transferring responsibility is not the same as building ownership. Local ownership developed through sustained engagement, technical backstopping, coaching, practical tools and joint implementation rather than through one-off training or assignment of responsibilities.

Irrigation creates opportunity, market convert it into income. SIP demonstrated substantial improvements in agricultural production through reliable year-round irrigation. However, the programme also learned that higher production does not automatically translate into higher household income. The lesson for future irrigation programmes is therefore to design the pathway from water → production → market → income from the outset, rather than treating irrigation and agricultural commercialization as separate interventions.

Climate resilience must extend beyond engineering design. Increasing climate variability and recurrent flood damage demonstrated that climate resilience cannot be achieved through stronger physical structures alone. SIP's experience reinforced the importance of combining resilient infrastructure standards with watershed-level thinking, effective operation and maintenance, sustainable financing and stronger institutional preparedness. The lesson is to treat climate resilience as a system-level responsibility, linking engineering, watershed management, institutions, financing and post-construction maintenance.



IN THEIR OWN WORDS



Hon. Tilchan Pathak
Minister, Ministry of Water Supply, Irrigation and Energy Koshi Province

SIP's success belongs to five institutions working together — federal, provincial, and local government, alongside water users' associations and SDC. What began here in Koshi Province is no longer just a provincial programme. We are strengthened through irrigation policies and regulation and have helped support to Local Government for formulating Small Irrigation Guidelines and Local Irrigation Act, thereby strengthening the federal governance itself.



Narmaya Pithakothe
Secretary, Okhrabari Pithakothe WUA
Chhatar Jorpati RM

We learned all the skills like how to manage an account, how to tender receipts and how to open a bank account. We didn't have any knowledge on such things before. Previously, we had to depend on our husband, but now we are able to handle these responsibilities.



Mahesh Chandra Neupane, Joint Secretary, Ministry of Infrastructure Development

The SIP has been an instrument to contribute meeting the government target of irrigation sector, specially reaching to 60% of the year-round irrigation by 2025 as per the Irrigation Master Plan—2019; it has also eventually contributed to achieve SDG 1, 2, 5, 6 and 13 targets. Thanx to SDC for helping reducing poverty of Nepal since last 70 years.

Daulath Kulung, Chairperson, Salpasilicho Rural Municipality, Bhojpur

Even from a distance, our winding canals are beautiful to look at. Today I understood something clearly: every responsibility has now passed from SIP to our municipality, and we accept it fully — a policy for operation and maintenance, a gazette small irrigation guideline, all of it. SIP was never only about water reaching a field. It is the constitution itself, made real





Bishnu Maya Khawah, Vice-Chairperson of Rong RM

The relationship between the farmers and the government is direct and accountable. “Water Users’ Association (WUA) inform me and extend an invitation for a visit, indicating that the task is completed,” she states. “I visit the site and see that the work has been finished to a high standard and is ready for payment process. I then personally sign the final bills”.



Mina Kumari Shreshta, Market Facilitator, Rautamai Namanta Krishi Tatha Pasupanchhi Kendra, Udaypur

In Business-to-Business meetings, we plan production and establish dual agreements related to vegetables supply. Instead of just delivering vegetables, we regularly coordinate with farmers via phone to assess the availability and quality produce. Once the vegetables arrive, I bring them to the market and distribute them to traders.



Man Kumari Shrestha, Farmer, Balainche Mohan Jalkeni WUA, Siddhicharan

Before we had irrigation here, we grew mostly millet and corn, with a small amount of rice and lentils, all depending on rainwater. We used to struggle a lot without enough water and even had to carry it for our needs. But now, with the help of small irrigation programme, things have improved greatly. We can now grow tomatoes-we’ve set up five tunnels-and we also grow greens, garlic, onions, and chilies. It’s made things easier, and we have enough to sell as well. My husband and I work together, and our children help in the mornings and evenings. We used to have big problems with pests and diseases, but with trainings through the small irrigation programme, we receive guidance and learned a lot from the SIP staff. They taught us how to make homemade remedies for plants, which has been very helpful.



Sushila Rai, Treasurer, Pokting Surke WUA, Siddhicharan Municipality, Okhaldhunga

My husband used to stay in Saudi Arabia for 10-12 years. He had a salary of 800 Saudi Riyal as currency, of which 600 Saudi Riyal as currency would be saved, and with that, he managed household expenses, phone bills, and other costs. Now he has returned home and lives with me. Together, we started vegetable farming, and we have a tunnel farming as well. We grow vegetables, and now, just by staying at home, we’re able to make a living. Previously, he used to go to Saudi Arabia to earn, but now, both of us are earning from home. After covering all expenses, including for our two children, we’ve been able to save about NPR 150,000 as currency in the bank this year.



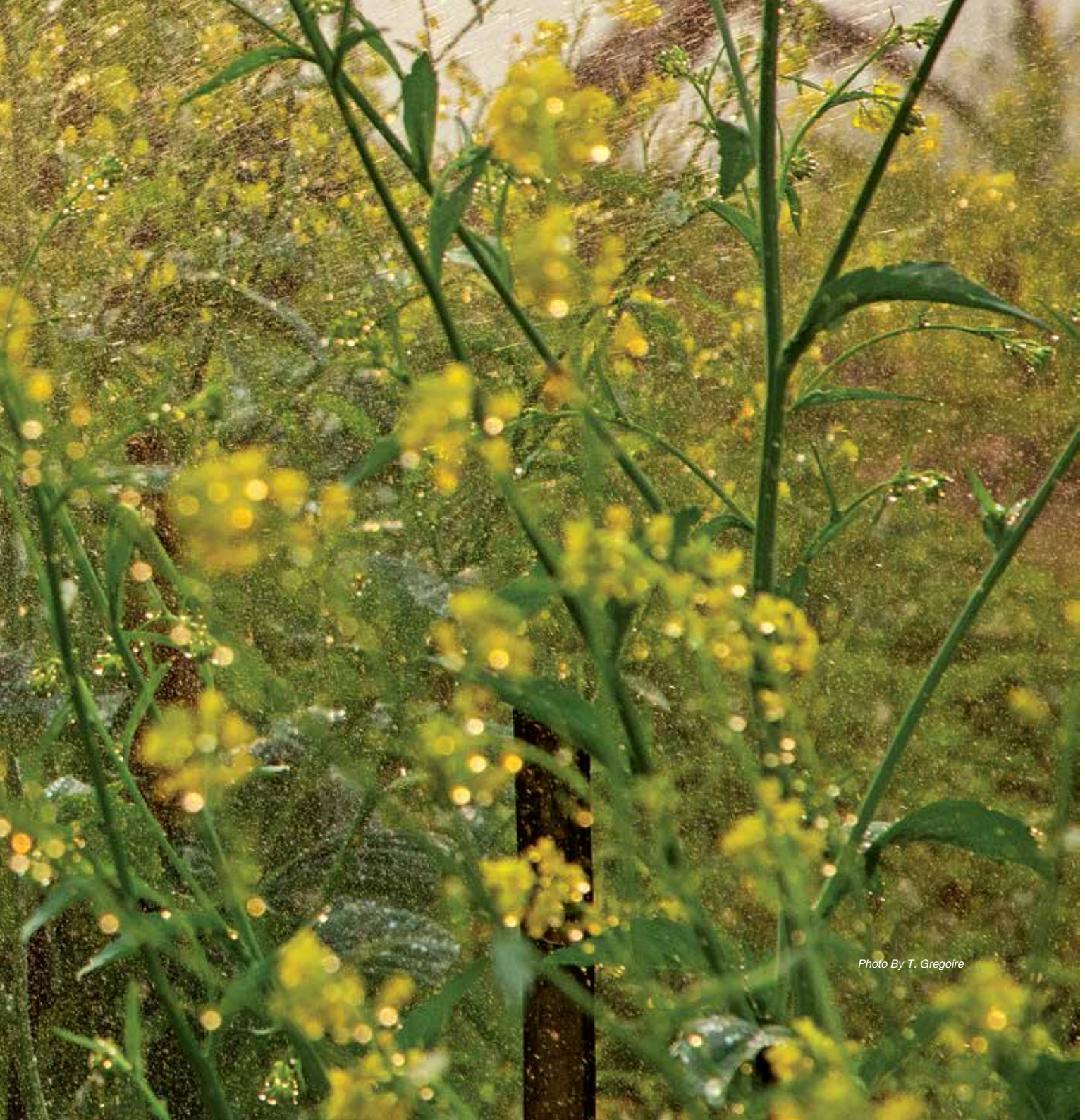


Photo By T. Gregoire

CHAPTER 5

STAFF OVERVIEW

Over the last six years, staff numbers ranged from 109 in the first year to 38 in the final year, with an average of 76 staff per year. Female staff made up between 15% and 29% of the workforce over the years.

WORKFORCE DIVERSITY

The Project emphasized workforce diversity, prioritizing staff from disadvantaged communities. Staff from Janajati communities substantially reached the national average, while staff from Dalit and Madhesi communities remained at less than half of the national average despite the high priority given to inclusion.

PROJECT MANAGEMENT AND IMPLEMENTATION SUPPORT CONSULTANTS (PMISC) TEAM, BIRATNAGAR



Front, left to right: Prakash Bahadur Karki, Hari Kumar Tamang, Lata Rai, Shova KC, Guna Raj Shrestha, Laxmi Lama, Punam Baral, Nirmala Lama, Bhim Khatri (NAMDP), Nabina Shakya
Back side, left to right: Satya Man Lama, Badri Man Sangat, Bala Ram Shrestha

OUR TEAM



FIKKAL CLUSTER TEAM



Back row, left to right: Diwas Nepali, Mandil Rai, Prakash Timilsina, Ratan BK, Keshab Kumar Lama, Laxmi Prasad Adhikari, Roshan Limbu, Niron Ulak, Prabesh Awasthi and Hem Raj Bhatta
Front row, left to right: Abhishek Munankarmi, Lokesh Kushuha, Chhayan Bajgain, Chetna Subedi, Priyanka Pradhan, Alisha Dahal, Agni Kumar Mukhiya, Naresh Chaudhari and Kirti Bajracharya (PMO/PMISC)

DHANKUTA CLUSTER TEAM



Back row, left to right: Bijay Silaal, Arjun Bajgain, Punya Prasad Chaudhari, Lokesh Kushuha, Kedar Nath Dahal, Prem Raj Limbu, Kritishree Upadhaya, Jigyasa Nepal, Dharmendra Bista, Ranjit Pandit, Basudev Katuwal and Samundra Singh Dhami
Front row, left to right: Anil Poudel, Subash Budhathoki, Roshan Sijakhwo, Ambika Shah, Ashmita Tamang and Md Najamuddin

OKHALDHUNGA CLUSTER TEAM



Left to right: Kedar Jirel, Sudeep Thapa, Udim Limbu, Manoj Kumar Chaudhari, Binuka Lama, Krish Kumar Tamang, Indira Sujaku, Bala Ram Rokaya and Indira Devi Bhattarai

UDAYAPUR CLUSTER TEAM



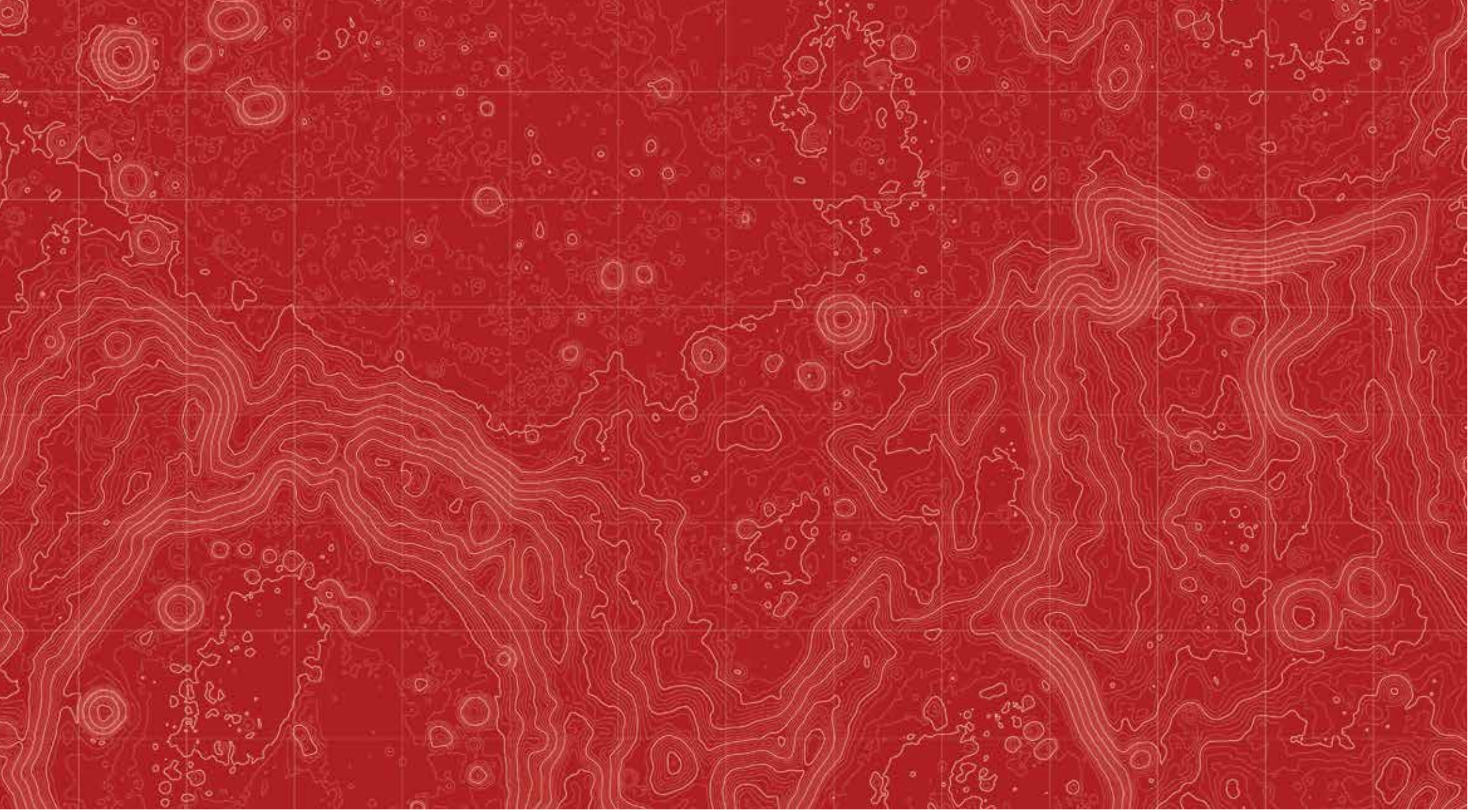
Left to right: Suresh Kumar Chaudhari, Kali Bahadur Khadka, Adesh Jha, Gautam Rai, Lav Kumar Rai, Bhumika Jha, Vijayanand Chaudhari and Prakash Nepali











SIP
Small
Irrigation
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SMALL IRRIGATION PROGRAMME