# Climate-smart agriculture in Nepal

## Champion technologies and their pathways for scaling up[1]

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POLICY BRIEF

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## Executive summary

**Adaptation to climate change in the agricultural sector and allied sectors is a major current and future challenge for Nepal. The majority of the population is still dependent on highly climate-sensitive agriculture. In recent years, long drought spells during the monsoon season and increased temperatures and unseasonal heavy rains during winter have caused serious distress to agriculture-dependent communities in many locations. If the Sustainable Development Goals (SDGs) of ending poverty, achieving food security and promoting sustainable agriculture are to be realised, climate change adaptation interventions need to be implemented in earnest.**

To address these challenges, the Scaling up Climate-Smart Agriculture (CSA) in Nepal project, aimed to (1) identify, test and screen CSA practices and technologies suitable for various agro-ecological zones; (2) develop pathways for scaling up champion CSA options; and (3) enhance the capacity of stakeholders and generate evidence-based knowledge materials to support the dissemination of climate-sensitive agricultural technology and practices.

The project was implemented in collaboration with local communities, Village and District Development Committees, District Agricultural Development Offices, and steered by a Project Advisory Committee, which comprised high-level representatives from the Ministry of Agricultural Development, Ministry of Population and Environment, Department of Hydrology and Meteorology and other departments working in agriculture and allied sectors. The project identified a shortlist (referred to as a 'pool' henceforth) of CSA technologies, practices and services relevant for the agricultural production system of Nepal. A set of CSA technologies was prioritised in consultation with key stakeholders, including farmers, and evaluated in their fields. Pathways for scaling up the selected champion CSA technologies were assessed on the basis of their nature, agro-ecological context and existing policies and programmes. The analysis showed that the pathways to scale-up follow a complex non-linear path, are dependent on agro-ecological context and need multi-sectoral collaboration.

This paper provides an overview of the project's methodology and findings. It aims to offer a synthesis of the research, field testing and policy work done over the the project period, which is captured in much more detail in the complete project reports. This document is specifically intended to inform the Ministry of Agricultural Development and other stakeholders involved in agriculture in their efforts to further enhance climate-smart agriculture across Nepal.

## 1. Background

Nepal's agricultural sector, which accounts for around three quarters of employment and one quarter of the country's gross domestic product (GDP),[2] is strongly affected by current climate variability, uncertainty and extreme events. Evidence indicates that the climate in Nepal is already changing and the impacts are being felt.[3,4] Rise in average temperatures, changes in rainfall patterns, increasing frequency of extreme weather events such as severe droughts and floods, and shifting agricultural seasons have been observed across the different agro-ecological zones of Nepal. In recent years, long drought spells during the monsoon and increased temperatures and unseasonal heavy rains during winter have caused serious distress to agriculture-dependent communities in many locations. A study carried out by the Climate and Development Knowledge Network (CDKN) revealed that the direct losses due to climate change in agriculture are equivalent to around 0.8% per year of current GDP and there will be a US$2.4 billion adaptation deficit by 2030 in three sectors including agriculture.[5]

These impacts are expected to hit poor and vulnerable households hardest, and may pose a challenge to food security and poverty reduction strategies. In addition to climate, social changes such as outmigration of male youths have increased women's workload in agricultural activities. Women also face structural power inequalities and poor access to the resources and information required to cope with shocks and stresses and recover from climate-induced impacts. Therefore, there is an urgent need to identify and promote technologies and practices that can increase farm productivity, farmers' adaptive capacity and, as a co-benefit, their ability to mitigate climate change impacts. To complement ongoing research and development activities in relation to climate change adaptation in agriculture, the project Scaling up Climate-Smart Agriculture in Nepal was implemented with the following objectives:

- to identify, test and screen prominent climate-smart agriculture (CSA) technologies, practices and services for the different agro-ecological and socioeconomic contexts of Nepal, with the participation of local stakeholders
- to develop 'pathways to scale-up' – defined as the sequence of steps used to promote the diffusion of CSA technologies to scale, to have broader positive impact – and implementation plans to champion CSA technologies in collaboration with local communities and government stakeholders
- to communicate and engage with key stakeholders of CSA to make informed decisions for climate change adaptation in agriculture.

## 1.1 Climate-smart agriculture

CSA is an evolving science and is understood by stakeholders in various ways. The Food and Agriculture Organization of the United Nations (FAO) defines CSA as "a way forward for food security in a changing climate. CSA aims to improve food security, help communities adapt to climate change and contribute to climate change mitigation by adopting appropriate practices, developing enabling policies and institutions and mobilizing needed finances."[6] Although there has been good response to CSA, there has also been strong opposition.[7] The counter-argument is mainly based on the idea that CSA would promote greenhouse gas (GHG) mitigation at the expense of food security and adaptation. Although the FAO definition has provided three major pillars of CSA, the relationship and priorities between the three pillars of CSA (namely food security, adaptation and mitigation) needs to be well defined. Therefore, more context specific investigation is essential. There has been a compelling appeal to prioritise the elements of CSA on the basis of local contexts and the needs of stakeholders. For example, CSA needs to focus on developing resilient food production systems that lead to food and income security under progressive climate change and variability.[8,9,10]

Defining CSA in the context of Nepal is highly complex. Nepalese agriculture is diverse in terms of climatic zones, food production systems and socioeconomic conditions. CSA needs to consider multiple dimensions of the agricultural production systems in the county. Inclusion of gender, youth and socioeconomically marginalised farmers is necessary. Hence, a CSA approach is needed for improving and transforming existing agricultural systems to promote national food security while adopting sustainable adaptation measures, respecting local concerns such as gender and social inclusion, and contributing to global climate change mitigation targets.

## 1.2 Policies on climate-smart agriculture in Nepal

Realising the need for planned efforts to address the challenges of climate change and variability in agriculture and allied sectors, the Government of Nepal has developed a National Adaptation Programme of Action (NAPA), enacted a national Climate Change Policy in 2011 (CCP), and implemented Local Adaptation Plans of Action (LAPAs), among others. Promoting climate-friendly practices in agriculture is one of the strategies set out in Nepal's Nationally Determined Contribution (NDC). Policies related to climate change adaptation, agriculture development and food security in Nepal primarily focus on the implementation of better agricultural practices and technologies, livelihood diversification and capacity-building activities.[11,12,13]

Meanwhile, GHG emission reduction from agriculture is not a high priority, but the Agricultural Development Strategy 2015 (ADS) of Nepal aims to promote green technologies and reduce carbon emissions. The ADS targets capacity-strengthening of agricultural extension staff and farmers on CSA practices and technologies for improved resilience to climate change and variability. The ADS also aims to promote CSA across the country, but elaboration is needed around: (1) where investment should be targeted (based on location-specific climate risks); (2) what crops and technologies should receive investment (based on crop and cropping systems); (3) when and how investment should be made; and (4) the implications of investments on food production, incomes, environment and food security.[14] Thus, it is very important to identify and prioritise CSA technologies and practices for different agro-ecological regions and integrate them into the climate change adaptation plans and policies to develop climate-resilient agricultural systems in Nepal.

## 2. Methods

This project was implemented in collaboration with local communities, Village and District Development Committees (VDCs and DDCs), and District Agricultural Development Offices, and steered by a Project Advisory Committee comprising high-level representatives from the Ministry of Agricultural Development (MoAD), Ministry of Population and Environment (MoPE), Department of Hydrology and Meteorology (DHM) and other departments working in the agricultural sector.

### 2.1 Identification and prioritisation of CSA technologies

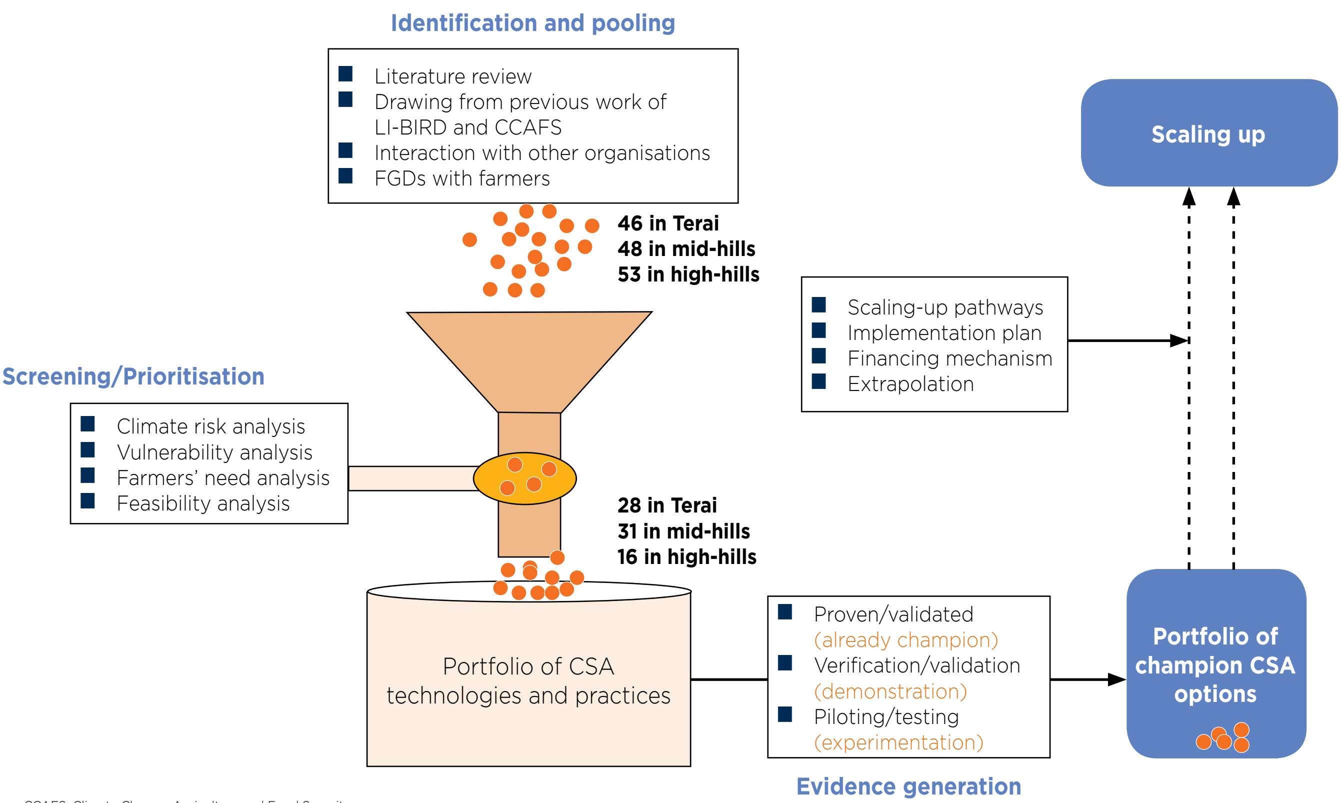
The implementation phase started with activities to identify, test and screen CSA practices suitable for different geographic, agro-ecological and socioeconomic contexts of Nepal by involving farmers, researchers and extension agencies. Figure 1 presents a systematic framework for CSA project implementation with multi-stakeholder engagement. Selection of the CSA technologies with the highest potential for scale-up and impact, referred to in this project as 'champion' CSA technologies, was done primarily via four criteria: technical appropriateness, farmers' acceptance, climate sensitivity and scalability.

For this, the project developed a pool (selection) of CSA technologies, by conducting a literature review, and consultation with stakeholders and experts; developed participatory screening and prioritisation methods; selected CSA technologies and practices for field piloting; carried out piloting of the selected technologies on farm; and finally screened the CSA champions for scaling up. All the potential CSA technologies and practices were grouped into four categories:

1. changes in agronomic practices
2. use of modern technologies and equipment to increase water, nutrient or other input use efficiency
3. information-related interventions such as use of information and communications technology (ICT) to disseminate climate information from agro-advisories and weather forecast services
4. practices that reduce or transfer risks associated with farming, such as weather-index-based agriculture insurance.

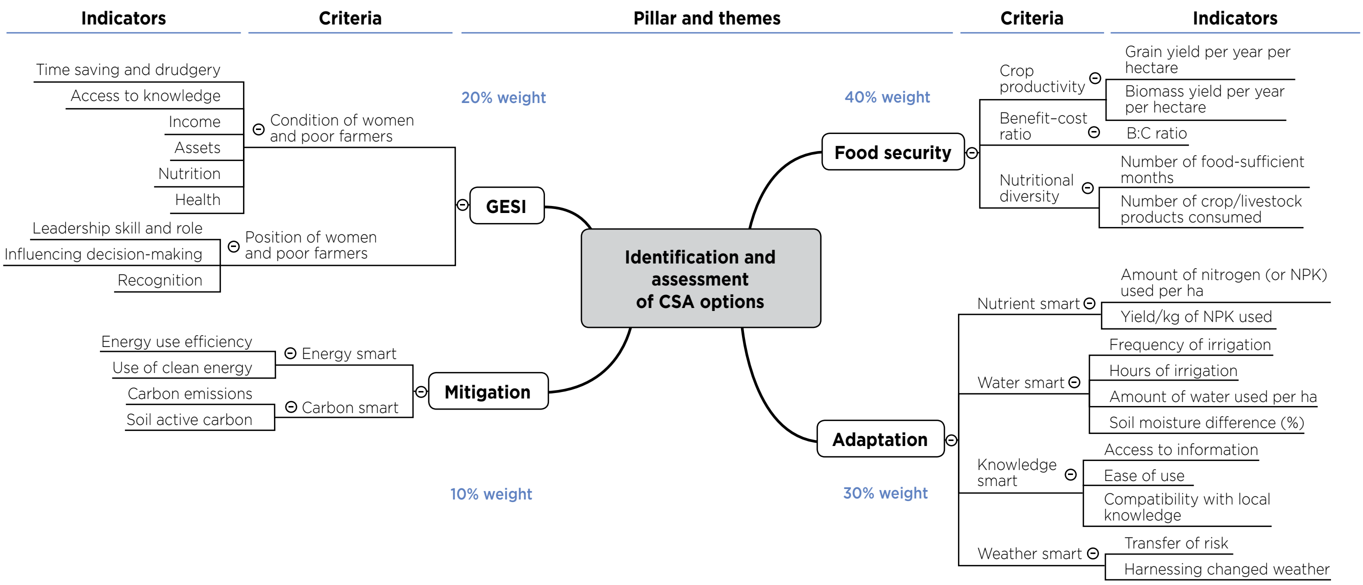
The three pillars of CSA, namely food security, adaptation and mitigation, together with gender equity and social inclusion (GESI) as a cross-cutting theme, were used with different weights for prioritisation of CSA options (see Figure 2).

**Figure 1. A systematic method of CSA technology scaling up**




CCAFS: Climate Change, Agriculture and Food Security;
CSA: climate-smart agriculture; FGDs: focus group discussions;
LI-BIRD: Local Initiatives for Biodiversity, Research and Development

**Figure 2. Criteria and indicators for the selection of CSA options**



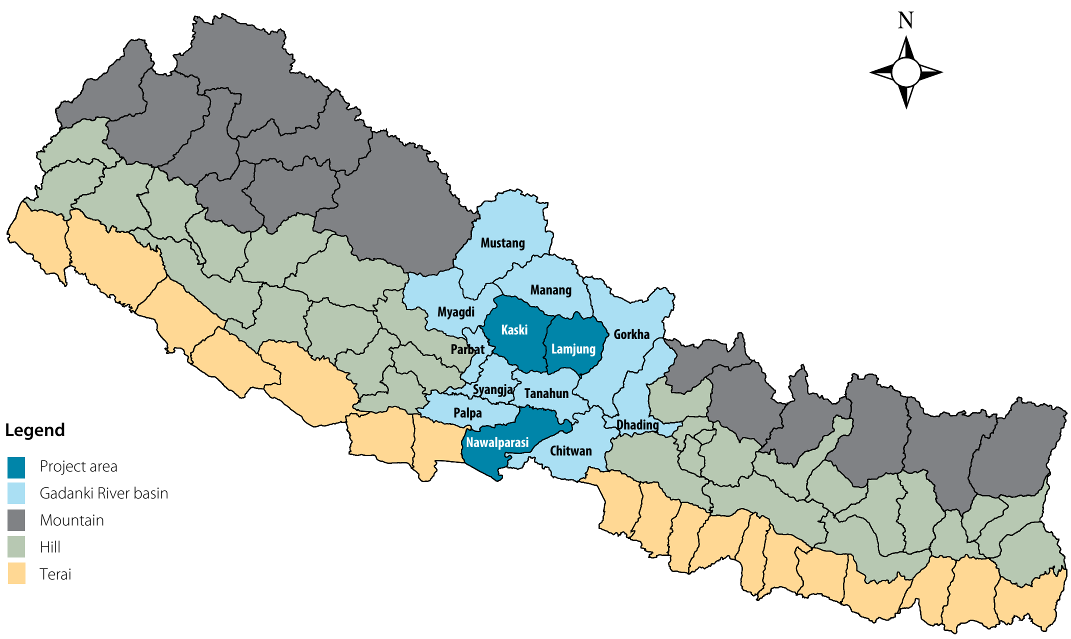

## 2.2 Testing and evaluation of CSA options

To cover a degree of agro-ecological variation across the country, three sites were selected for detailed study and field piloting of CSAs in the Gandaki River basin in western Nepal: (1) Ghanapokhara Village Development Committee (VDC) of Lamjung District representing high-altitude farming systems 2,000 masl; (2) Majhthana VDC of Kaski District representing mid-hills farming systems from 1,000 to 1,500 masl; and (3) Agheuli VDC of Nawalparasi District representing southern plains (Terai) from 300 to 600 masl (see Figure 3). These sites were selected on the basis of multiple criteria, including agro-ecological representation, climatic vulnerability compared with other similar locations, presence of the dominant and representative farming systems of the specific agro-ecological zones, and accessibility.

## 2.3 Extrapolation of CSA technology

Extrapolation of CSA options based on field evidence can help CSA policy-makers and implementers at national and subnational levels to make informed decisions and invest in a strategic CSA portfolio for existing and future uncertainties. This is important because CSA includes a package of interventions best suited to a local context to improve the local production in the face of climate change. For extrapolation purposes, this project focused more on

**Figure 3. Map of Nepal showing project districts and the Gandaki River basin**



the analogue sites – sites which display similar current and/or future climatic conditions to the project districts (Nawalparasi, Kaski and Lamjung). Cultivation areas for rice, wheat, maize and millet in each district were used to estimate the geographic potential for scaling up of the selected CSA options. More than 50% climate similarity was assumed to be a favourable condition for technology transfer from one location to another.

### 2.4 Pathways to scale-up

The project then developed pathways to scale-up and implementation plans for 'champion' CSA practices with participation of local communities and government stakeholders. For this, the project carried out climate analogue analysis and developed extrapolation areas for CSA activities; assessed barriers to and opportunities for CSA scaling up in existing policy and institutions; and proposed a model and pathways for scaling up of the selected CSA technologies in Nepal.

## 3. Major findings

### 3.1 Pool of CSA technologies

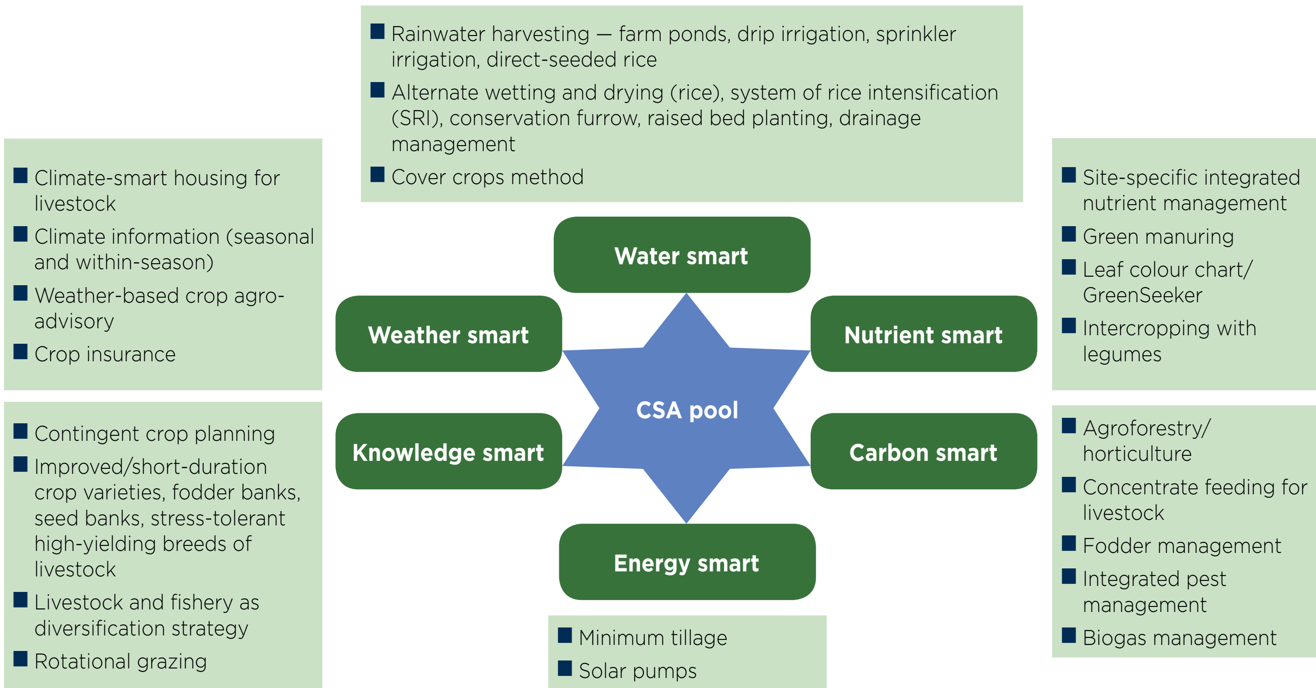
This project developed a pool of CSA technologies that are most relevant in the context of agro-ecological and socioeconomic conditions of Nepal. These CSA technologies range from a simple adjustment in crop management practices (e.g. changes in sowing time, application of water and fertilisers, tillage practices and inter-cultural operations) to the transformation of agricultural production systems (e.g. change in cropping systems and land uses) to adjust to new climatic conditions in a particular location. These include, depending on their appropriateness for a particular location, water-smart practices, weather-smart activities, nutrient-smart practices, carbon- and energy-smart practices and knowledge-smart activities. Many of these interventions have been successful in raising production and income, and building the resilience of farming communities in many locations in Nepal. Figure 4 presents a list of relevant CSA technologies for different crops, cropping systems and livestock from this project.

Altogether, 56, 58 and 58 potentially scalable agricultural technologies, practices, processes and methods were identified for Terai, mid-hills and high-hills regions, respectively. From that list, 28, 31 and 16 CSA options were chosen for participatory on-farm evaluation in Terai, mid-hills and high-hills regions, respectively.

### 3.2 Screening champion CSA technologies and portfolios

The meta-data and data analysis from the pilot sites were consolidated for screening the champion CSAs for high-hills, mid-hills and Terai regions. This list was again verified for technical appropriateness in the local context, farmers' acceptance, economic benefits, climate sensitivity and scalability. From these, the final list of champion CSA options for Nepal constitutes 17 CSA options. Among them, 11 are

**Figure 4. Pool of major CSA technologies**



for high-hills regions, 13 for mid-hills regions and 10 for Terai regions (Table 1). Seven CSA options from the list have high potential for application across the three agro-ecological regions. The list was shared and validated with farmers. Similarly, the final list was shared in a stakeholders workshop for validation.

## 4. Pathways for scaling up champion CSA practices

Champion CSA options are expected to have a greater potential for adoption and achieve higher impacts. However, up-scaling of CSA options is a complex and non-linear process that has to consider ecological diversity, socioeconomic and institutional dimensions, and climate sensitivity at various levels and scales. Scaling up can be horizontal across the geographical space in both the present and the future, and vertical integrating at policy and institutional levels. The project analysed the possibility of scaling up by identifying climate analogue sites for the present and future within districts and in the country, so that the selected champion CSA options can be scaled up; and by assessing the existing policy and institutional frameworks to integrate champion CSA options in them.

### 4.1 Exploration of climate analogue sites

A climate analogue tool was used to estimate the current and future climate similarity with pilot areas. Table 2 presents the proportion of total land area having different levels of similarity with the current climate for Nawalparasi, Kaski and Lamjung districts. At present, more than 65% of the area has 25–50% climate similarity in all three districts. Similar or different varieties of crop can be cultivated in the 25–50% similar areas. Between 13% and 21% of the area in the districts has 50–75% climate similarity. In these areas the same crop varieties can be grown. Areas with more than 75% similarity are very few (<1% to 9.5%).

Table 2 also presents the area having different levels of climate similarity in the future for Nawalparasi, Kaski and Lamjung districts. The area with 25–50% similarity in all districts ranges from 62% to 84%. Similar or different varieties of crop will be able to be cultivated in these areas in the future. More than 50% similarity areas ranges from 15% to 37% of total agricultural land. In these areas, the same crop varieties will be able to be grown.

**Table 1. Champion CSA options for high-hills, mid-hills and Terai**

| Champion CSA options | High-hills | Mid-hills | Terai | Smartness |
|---|---|---|---|---|
| Introduction of new crops, seeds, varieties, seedlings, etc. | ✓ | ✓ | ✓ | Weather and knowledge smart |
| Home garden | ✓ | ✓ | ✓ | Weather and knowledge smart |
| Mixed farming (legume integration) | ✓ | ✓ | ✓ | Nutrient and weather smart |
| Community seed banks | ✓ | ✓ | ✓ | Knowledge smart |
| Small hand-tools, machines | ✓ | ✓ | ✓ | GESI and labour/energy smart |
| Agriculture insurance (particularly index based) | ✓ | ✓ | ✓ | Weather smart |
| ICT-based agro-advisory | ✓ | ✓ | ✓ | Knowledge and weather smart |
| Cattle-shed improvement | ✓ | ✓ | | Nutrient and carbon smart |
| Package of plastic pond, plastic house, drip irrigation and improved cattle-shed | ✓ | ✓ | | Water, weather and nutrient smart |
| Plantation and agroforestry | ✓ | ✓ | | Carbon smart |
| Plastic house | ✓ | | | Weather and water smart |
| Plastic pond | | ✓ | | Water smart |
| Water-harvesting ponds, multiple-use and water source protection | | ✓ | | Water smart |
| Drip irrigation | | ✓ | | Water smart |
| Solar-based irrigation | | | ✓ | Water and energy smart |
| Conservation agriculture (zero tillage, residue retention) | | | ✓ | Carbon, water and weather smart |
| System of rice intensification | | | ✓ | Water smart |
| **Total number of options** | **11** | **13** | **10** | |

**Table 2. Area with different levels of similarity to project districts under current and future climate**

| | Nawalparasi District | | Kaski District | | Lamjung District | |
|---|---|---|---|---|---|---|
| Climate similarity | Present area (%) | Future area (%) | Present area (%) | Future area (%) | Present area (%) | Future area (%) |
| < 0.25 | 0.01 | 0 | 0 | 0 | 0.04 | 0 |
| 0.25 to 0.5 | 68.8 | 62.3 | 79 | 79.8 | 85.9 | 84.2 |
| 0.5 to 0.75 | 21.7 | 35.7 | 20 | 19 | 13.4 | 15.4 |
| > 0.75 | 9.5 | 2.1 | 0.9 | 1.2 | 0.7 | 0.3 |

The extrapolation analysis identified, prioritised and evaluated a range of CSA options suitable for the pilot sites and beyond. Use of improved seeds (water-, heat-, insect/pest-tolerant varieties); provision of irrigation water; proper management of nutrients based on different tools (leaf colour chart, GreenSeeker crop sensor and nutrient expert tool); nursery management in paddy; zero/minimum tillage in wheat, maize and millet; intercropping in maize and millet; and ICT-based agro-advisory services were the priorities for farmers and agricultural staff. Meta-analysis of past technology evaluation in similar agro-climatic zones and testing and evaluation of CSA options in farmers' fields showed that there is high potential to improve crop yield, increase resilience and reduce emissions from the adoption of these technologies.

## 4.2 Policy and institutional assessments

A detailed review of the national policy environment was conducted to evaluate the possibility of scaling up CSA. The main objective of the review was to determine whether CSA had been integrated into existing agriculture and climate-change-related policies, institutions and financial mechanisms; to what existent institutions are able to plan and manage CSA; and what barriers and opportunities the country is facing for scaling-up of CSA.

The review showed that policies and institutions reflect an increasing realisation of the challenges posed by climate change for agricultural and food security. There is an increasing coherence between objectives for agriculture development, strategies and policies, especially those formulated after 2000. There is also increasing availability of new technologies and practices such as energy- and water-use-efficient technologies and efforts to encourage farmers to use them to minimise agriculture production risks, promoted through subsidies. However, there is still a clear gap between policy intentions and implementation. Currently, there is limited evidence of efforts within relevant institutions to internalise policy intentions and, therefore, these intentions are seldom translated into annual plans, budgets and actions. The review also revealed an inadequate evidence base for CSA tools and practices, weak coordination among actors (within government agencies and between government and the private sector), limited coherence in priorities, and inadequate capacities across the relevant institutions in terms of human and financial resources, which pose barriers to scaling up CSA. Therefore, adaptive policies in agriculture need to be coherent across all institutions, reflected in actionable plans, and backed up with additional investments in knowledge, technologies and human capital to promote wider adoption of CSA.

## 4.3 Pathways for scaling up the champion CSA technologies and practices

Efforts to scale up CSA options therefore need to take account of complex and continuously changing interactions between biophysical, social, economic, environmental, climatic and institutional factors. The complexity is compounded as these factors interact with different agricultural management levels (local to national, and geographically) over different time frames. Existing pathways to scale-up, however, do not adequately take into account these complex realities and embrace the common approach of "find out what works (in one place) and do more of the same (elsewhere)".[15] The literature shows that scaling-up is a non-linear, socio-cognitive process where knowledge, institutions, markets and the local environment (among other factors) determine the nature, extent and direction of scaling up.

This project considers both horizontal (replicating promising or proven CSA options in new geographic areas) and vertical (institutions and policy framework) aspects. The pathways for scaling up champion CSA options were developed through various methods – a combination of review, consultation with experts and researchers, and discussion with farmers during field observation. Reviews included a detailed analysis of policies, practices and operating guidelines of the Ministry of Agriculture Development (MoAD), Department of Agriculture (DoA) and District Agriculture Development Offices (DADOs) for implementing CSA options. A review of existing plans, programmes and projects of MoAD, District Development Committees (DDCs) and Ministry of Population and Environment (MoPE) were also conducted to explore opportunities for scaling up CSA options.

### 4.3.1 Key challenges for scaling up in Nepal

There is very little evidence-based knowledge available on CSA options that fits with Nepali farming systems. In addition, the conceptual clarity on complex and non-linear processes of agricultural technology diffusion and scaling up of CSA options have not been well understood by the agricultural professionals and organisations working in agricultural development in Nepal. The existing institutional capacity and coordination mechanisms among the government departments, private sector actors and non-governmental organisations involved in CSA require further development to promote CSA. Some projects have promoted adaptation in agriculture, but have been implemented in a project-based approach without adequate attention to sustainability of the practices. In addition, policies and provisions are still not focused on promoting climate-friendly interventions.

### 4.3.2 Pathways to scale-up

Based on the need, context, institutional and policy framework, and attributes of the technologies, the project proposed three models to support the pathways for scaling up of CSA options. These were (1) knowledge-transfer model, (2) commercial business model and (3) policy incidence model. The knowledge-transfer model is appropriate for knowledge-intensive CSA options. The knowledge-transfer model is about scaling up the technology by affecting farmers' adoption process through training, demonstration, participatory evaluation, exposure visits, etc.; the role of the public sector is vital to promote these technologies. The commercial business model is suitable for input-intensive or proprietary-based CSA options, where private businesses can scale up the CSA options by selling the inputs required for scaling-up of the CSAs. Finally, some of the CSA options require removing policy bottlenecks and/or increased support from government. Table 3 describes the models for the up-scaling in terms of types of CSA options and the role of the government to promote scaling up.

While every CSA option will operate in its own time frame, scaling up is best seen as a long-term, non-linear, multi-stakeholder, multidisciplinary process at various levels of programme management. The project proposed three phases of pathways, going beyond the traditional project approach, towards ensuring wider application and sustainable impact (Figure 5).

## 5. Conclusion

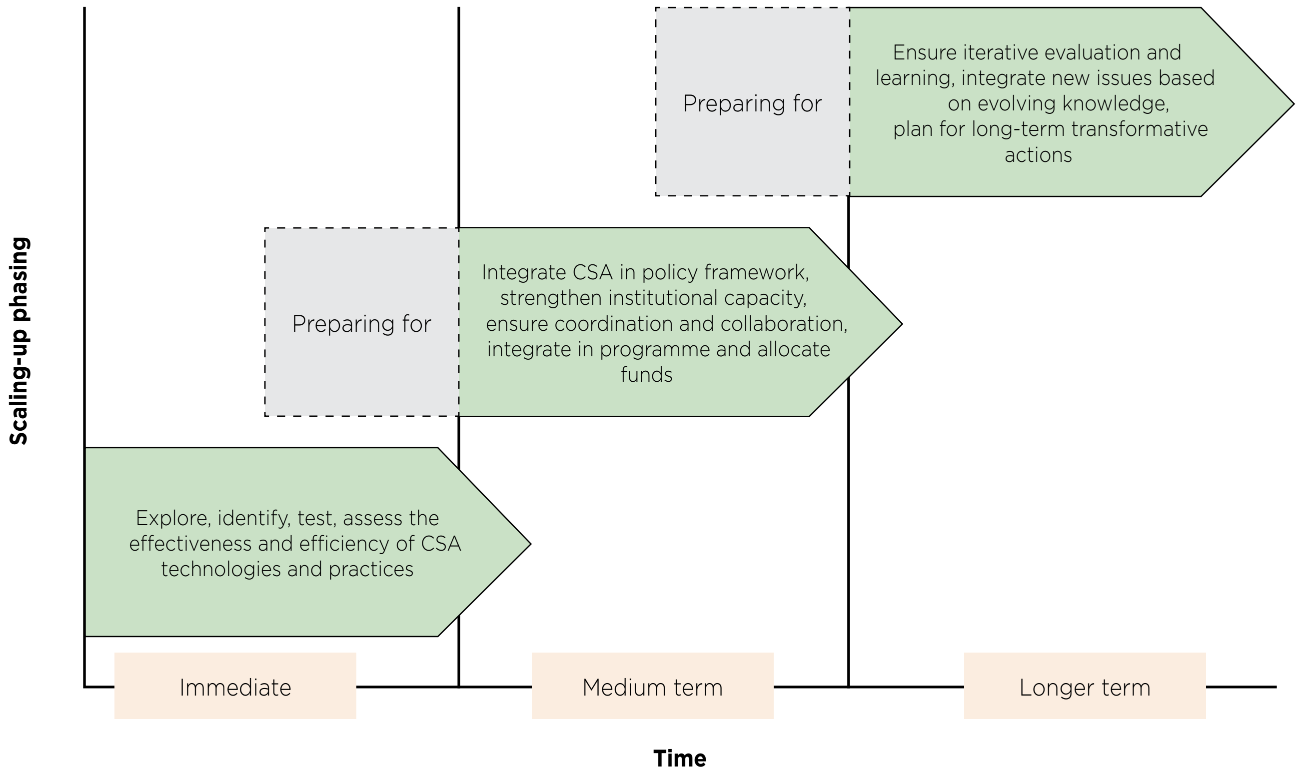
Since technology generation is a continuous process and is context specific, more research and refinement are needed to generate a stream of champion CSA options for adoption by smallholder farmers. In addition, greater coordination and continuous learning among researchers, development workers and policy-makers is vital to make CSA scaling-up more effective. Increased focus on scaling-up of champion CSA options through multi-pronged and multidisciplinary approaches is required, with consideration for local context, nature of the technologies, and synergies; these could be developed via public–private partnerships. It is time to systematically integrate CSA into local development plans, the National Adaptation Plan (NAP), NDC and five-year development plan, and institutional research, monitoring and evaluation systems for learning and continuous improvement.

The outputs generated by this project are unique for making Nepali agricultural systems resilient, but they warrant further verification, validation and refinement, since climatic risks and sociocultural contexts vary across locations. The project provided a lot of ideas, methods, tools and options that can be used to integrate CSA into climate change adaptation of the agricultural sector in a way that contributes to its aspiration of achieving sustainability.

**Table 3. General models of pathways to scale-up for selected CSA options**

| Scaling-up model | Example CSA options | Government role |
|---|---|---|
| Knowledge-transfer model | Conservation agriculture (mulching, residue retention); improved home garden; improved cattle-shed; package of plastic pond, plastic house, drip irrigation and improved cattle-shed; mixed farming (legume integration); system of rice intensification; water-harvesting ponds; multiple use and protection of water source; plantation; and agroforestry | Support for capacity-building (e.g. training, demonstrations, financial incentives to target beneficiaries) |
| Commercial business model | New crop varieties/seeds; plastic pond; plastic house; drip irrigation; plastic house plus drip irrigation; home garden (diversity kit); small farm-tools and machines | Market facilitation and regulation, quality control |
| Policy incidence models | Solar-based irrigation; community seed banks; agriculture insurance (particularly index-based); ICT-based agro-advisory (in the beginning) | New policy, targeting, priority, investment |

**Figure 5. Phases of the pathway to scaling up CSA technologies**



## Endnotes

1 This technical paper was mainly derived from the outputs and lessons learned from the project Scaling up Climate-Smart Agriculture in Nepal (CDKN Project Reference TAAS-0044), which was implemented by Local Initiatives for Biodiversity, Research and Development (LI-BIRD) and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) from 2015 to 2016 in Nepal. The technical team comprised Dr Bikas Poudel, Dr Pashupati Chaudhari, Dr Kiran Bhatta, Dr Balaram Thapa, Dr Ram Bahadur Rana, Mr Keshab Thapa and others from LI-BIRD; and Dr Arun KC, Dr Paresh B. Shirsath and Dr Pramod Agrawal.

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**Project study team:** This project was led by the Local Initiatives for Biodiversity, Research and Development (LI-BIRD) in partnership with CGIAR's Research Programme on Climate Change, Agriculture and Food Security (CCAFS) in collaboration with the Ministry of Agricultural Development, Nepal.

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**About this document:** This policy brief synthesises key findings and recommendations for decision-making under uncertainty in the agriculture sector in Nepal. This brief highlights the methodologies used for selection of champion climate-smart agriculture (CSA) practices for different agro-ecological regions of Nepal and recommendations for scaling up the champion CSA technologies and practices in Nepal.

More detailed descriptions of the climate risk assessment methodology for identification and piloting of CSAs, the methodology for screening champion CSAs, the scaling up strategies, and the policy and institutional analyses are covered in the technical reports of the project.

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