International Water Management Institute

From Pilot to Platform: Public–Private Delivery of Climate Information Services in Sri Lanka

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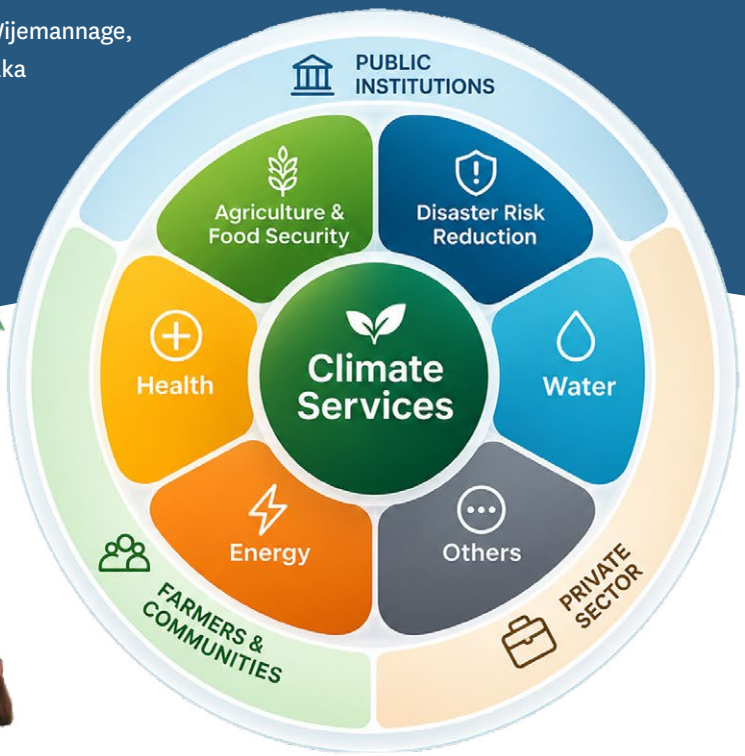



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Photography

Front cover: Sri Lanka's agricultural landscapes and farming communities linked to an integrated climate services framework, connecting climate information to decisions across climate-sensitive sectors. Photos credit: Giriraj Amarnath, IWMI. Composite: Shagar Thangaraj, IWMI.
Back cover: Paddy cultivation landscape in Sri Lanka's Northwestern Province, showing lush green rice fields surrounded by trees and natural vegetation during the vegetative growth stage. Photo credit: Giriraj Amarnath, IWMI.

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Acronyms and Abbreviations

ADB	Asian Development Bank
ANACIM	Agence Nationale de l'Aviation Civile et de la Météorologie (Senegal)
ASC	Agrarian Service Centre
AWARE	Early warning, Early action and Early financ
BICSA	Bundled Solutions of Index Insurance with Climate Information and Seed Systems
CCAFS	Climate Change, Agriculture and Food Security
CBSL	Central Bank of Sri Lanka
CGIAR	CGIAR (formerly Consultative Group on International Agricultural Research)
CIC	Chemical Industries (Colombo)
CSIR	Council for Scientific and In ustrial Research
DAD	Department of Agrarian Development
DEWN	Disaster and Emergency Warning Network
DoM	Department of Meteorology
EDB	Export Development Board
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross domestic product
GFDRR	Global Facility for Disaster Reduction and Recovery
GSMA	GSM Association
GWP	Global Water Partnership
ILRI	International Livestock Research Institute
IWMI	International Water Management Institute
JICA	Japan International Cooperation Agency
KVPL	Kelani Valley Plantations PLC
LMD	Lanka Monthly Digest
MAFF	Ministry of Agriculture, Forestry and Fisheries (Japan)
MoES	Ministry of Earth Sciences (India)
NABARD	National Bank for Agriculture and Rural Development
PLC	Public limited company
RDD	Rubber Development Department
RRISL	Rubber Research Institute of Sri Lanka
SLYCAN	SLYCAN Trust
SMS	Short message service
SME	Small and medium-sized enterprise
WMO	World Meteorological Organization
WRI	World Resources Institute

Foreword

Water security and climate security are now the same problem seen from two sides. Every farmer IWMI works with, from the dry zone of Sri Lanka to the Sahel, makes a handful of decisions each season on which the year depends: when to sow, what to plant, when to irrigate, whether to spend on inputs. Each of those decisions is a bet on the weather. The quality of the information behind the bet is, increasingly, the difference between a harvest and a loss.

The international community has recognised this. The United Nations' Early Warnings for All initiative commits every person on earth to protection by an early warning system by 2027, and the World Meteorological Organization has set out how public and private actors should engage to make climate services sustainable. What has been harder to find is practical evidence of how those principles work in a real district, with a real department, a real company and real farmers, and at a cost a government could afford to replicate. This report provides that evidence.

It documents five years of work by IWMI and its partners in Kurunegala District, where a public Agrarian Service Centre, a seed company and a plantation group now operate together the layers of a climate information service that Sri Lanka has long needed and never formalised. The Department of Agrarian Development validates and delivers every message; CIC Holdings supplies the seed and the agronomy; Kelani Valley Plantations is bringing the model to the plantation economy. The results, set out carefully and with their limitations, show what a public rail and committed private partners can achieve when the roles are clear.

What I find most valuable in this report is its argument about where value lies. The forecast, it shows, is the inexpensive part. The asset is the public institution that farmers already trust, and the task of a national framework is to protect and fund that institution while giving private partners a clear and accountable role alongside it. That is a lesson with application well beyond Sri Lanka, and it is consistent with IWMI's conviction that digital innovation in agriculture succeeds when it strengthens public systems rather than bypassing them.

The report arrives at a critical moment. Sri Lanka faces a very strong El Niño in the 2026–27 Maha season, less than a year after Cyclone Ditwah. The recommendations it makes to the Government of Sri Lanka, to the Department of Meteorology and the Department of Agrarian Development, and to the private partners are specific, affordable and timely. I hope they are taken up, and I hope the model they describe will inform the national frameworks for climate services that many countries are now preparing.

I thank the Government of Sri Lanka, the Department of Agrarian Development, CIC Holdings, Kelani Valley Plantations and the farmers of Nagollagama for their partnership, and the CGIAR Climate Action Science Program and the Ministry of Agriculture, Forestry and Fisheries of Japan for their support. I commend the report to all who share our aim: that the best available climate information reaches the people who need it most, in time to act.



Mark Smith

Director General, International Water Management Institute

Summary

This report documents a public-private model for delivering climate information services to farmers, built in Kurunegala District since 2021; assesses what it has delivered and at what cost; and sets out what is needed to extend it into a national framework. Although Sri Lanka already had the institutional capacity to deliver climate information services, the relevant institutions have not worked together. until 2021, when IWMI started facilitating partnerships between the Department of Agrarian Development (DAD), CIC Holdings and Kelani Valley Plantations in Kurunegala District.

At the Nagollagama Agrarian Service Center, this collaboration took practical shape. The center uses a seven-day forecast from IWMI's AWARE platform to develop crop-specific advisories, which are validated by the DAD officer and the farmer organization before being sent twice a week by SMS to all registered farmers. In Yala 2025, the service reached 100 farmers, expanding to nearly 10,000 by Maha 2026, with more than 125,000 advisories sent during this period. An Agro-Climate Advisory Laboratory was also opened at the center on June 1, 2026, prompting two neighboring centers to formally request the service.

Farmers who received the advisory and grew crops using CIC climate-resilient seed harvested 226 kg more per acre than their neighbors. At the guaranteed paddy price, this additional yield was valued at about 82$ ($1=330 LKR), with a closely supervised cohort recording a gain of 390 kg per acre. IWMI's cash investment over a five-year period amounted to USD 11,000, or approximately USD 1 per farmer reached. This low cost reflects effective utilization of public assets, including DAD officers, the farmer register and farmer organizations. The forecast is also relatively inexpensive to reproduce, the critical asset being the public delivery network.

These partnerships illustrate three of the four partnership archetypes in IWMI's framework. Nagollagama demonstrates white-label delivery through a public channel while CIC, which supplies about 40% of the country's certified seed paddy, functions as an input-side anchor tenant, contributing seed, agronomists and brand trust. Kelani Valley Plantations, with 3,217 hectares of rubber affected by an estimated 72 to 100 rain-related lost rubber tapping days each year, is developing into a buyer-side anchor tenant and is the first partner with the potential to pay for a subscription (KVPL, 2026). The remaining archetype, a shared climate data commons, is yet to be established.

The report makes with six recommendations addressed to the public and private institutions whose decisions they require. Section 10 addresses them, in order, to the DAD; IWMI and the Department jointly; CIC Holdings; Kelani Valley Plantations; the Department of Meteorology and the Ministry of Agriculture; and the Ministry of Agriculture with the Cabinet Subcommittee on El Niño. For the public sector: formal ownership of the advisory function by the DAD, with the farmer register as the system of record; a tiered meteorological data license that opens core observations and prices derived products; and a national framework for public-private engagement in climate services, with a dedicated budget line, a revived parametric risk layer anchored in the national insurer, and a neutral host institution. For the private sector: written partnership agreements that define what each partner supplies, how farmer data is used and how shared costs are met, and a move from in-kind contribution to paid services where a commercial return exists. Underpinning both is a commitment to rigorous, independent evaluation, so that the model's evidence keeps pace with its reach and a national business case can be built on it.

Introduction

Climate services in the agricultural value chain

Climate information services turn weather and climate data into decisions. For a farmer, the relevant decisions are few and consequential: when to prepare and sow land, which variety of crop to plant, when to apply fertilizer and pesticides, whether to irrigate and when to harvest. Each decision is sensitive to rainfall and temperature over the following days and weeks, and each is made once a season, with little margin for error. A climate service delivers a forecast in the lead time required for a particular decision, translates it into crop- and location-specific advisories, and communicates it to the farmer through a trusted and timely channel. Evidence that this changes outcomes is now strong. A randomized trial involving 13,675 rice farmers in Odisha found that customized digital advice increased harvests by 4.1% and reduced the probability of severe crop loss by 10%, rising to 21% in seasons of inadequate rainfall, with a long-run benefit-cost ratio estimated at between 12:1 and 19:1 (VoxDev 2025). Across six experimental studies in five countries, mobile-delivered agricultural information increased yields by about 4% and the adoption of recommended inputs by about 22% (Fabregas et al. 2019). In Senegal, farmers using seasonal forecasts earned USD 41 more per hectare, an increase of 16% (CCAFS 2022). The common finding is that climate services are above all a d e-risking tool: their greatest value is realized in a bad season, which is the season that matters most to a smallholder.

The value of a climate service is created along a chain, not at a single point. Observations must be collected and modeled; forecasts calibrated into indices and translated into sector-specific advice; and advice delivered and integrated into decisions. Where risks cannot be avoided, they may be transferred through insurance or anticipatory finance. No single institution performs all these functions well. National meteorological services produce authoritative forecasts but rarely reach the farm; agricultural extension services reach the farm but rarely have access to the forecast; and input companies, insurers and mobile operators reach farmers regularly through their businesses but do not generate climate information. The global experience of the past fifteen years shows that climate services scale only when these actors are brought together in a deliberate arrangement, and that the arrangement must establish who owns the content, who owns the delivery channel and who pays (Hansen et al. 2019; World Bank 2019).

Public-private partnerships have been the form this arrangement has taken wherever it has endured. In Ghana, the Esoko–Vodafone partnership links forecasts from the Ghana Meteorological Agency, Esoko's translation and delivery services, quality checks by the Council for Scientific and Industrial Research (CSIR) and the agriculture ministry, and enrollment through Vodafone's Farmers' Club at USD 0.20 a month. It grew from 1,000 pilot farmers to more than 300,000, of whom 274,000 pay (CCAFS 2019). In Senegal, the national meteorological agency ANACIM works with private firms Jokalante and Meteo-Mbay to reach about half a million farmers and fisherfolk, with revenue coming from input dealers, cooperatives and NGOs rather than farmers (WRI 2021). In India, crop insurance has made weather data a paying public good: private firms such as Skymet install and operate automatic weather stations, including 150 under a NABARD-financed project, enabling insurers to settle claims automatically using their data, while the India Meteorological Department retains responsibility for the authoritative forecast (NABARD n.d.). In Sri Lanka, the Disaster Management Center's partnership with Dialog Axiata under DEWN has delivered authorized emergency warnings to mobile subscribers since 2009, with the public agency verifying each alert and the operator delivering it (GSMA 2015). WMO has codified the lessons of these and other cases in its guidelines on public-private engagement. These rest on five principles: shared value, sustainability, integrity, sovereignty and transparency. They call on governments to define the public task, open core data and establish a transparent legal framework for private participation (WMO 2023; WMO 2025). The World Bank's review of hydromet partnerships adds the principle that guides this report: a public-private partnership is a financing arrangement for a public service, not a transfer of public obligations to the private sector (World Bank 2019).

The same experience also shows why partnerships fail. Services built on farmer subscriptions alone have rarely covered their costs. Nokia Life closed in 2014 (GSMA 2014). Reuters Market Light in India experienced slow adoption and revenues below projections, leading to a management buyout in 2013 and a subsequent change in business model (London Business School 2016). The early Esoko model also pivoted when revenue-sharing arrangements with mobile operators proved insufficient (GSMA 2012). Services funded on a project basis have ended with their projects, as India's 199 District Agromet Units did in March 2024 (Ministry of Earth Sciences (MoES) 2025). Services whose enrollment depended on an unrelated administrative instrument have also collapsed when that instrument changed, as with Sri Lanka's compulsory crop insurance in 2015 (Daily FT 2016). The durable models share three features: revenue anchored in an intermediary or in government rather than in the farmer; an existing public asset on which to build; and a sustainability plan established at inception rather than at the end of the grant (Tall et al. 2018; Winrock 2018).

IWMI's work in Sri Lanka has been designed with these lessons in mind. Under the CGIAR Climate Action Science program, with support from Japan's Ministry of Agriculture, Forestry and Fisheries, IWMI has developed a public-private partnership model for climate information services that places the forecast on a public delivery channel and brings in private partners where their own businesses give them an incentive to participate. This report describes the model as it currently operates in Kurunegala District through the Nagollagama Agrarian Service Center and IWMI's partnerships with CIC Holdings and Kelani Valley Plantations. It also sets out how the model could provide the basis for a national framework. Section 1 describes the gap the model addresses; Section 2 sets out the partnership framework; Sections 3 to 5 present the three cases; Sections 6 and 7 compare them and assess their economics; Sections 8 and 9 address the enabling framework and the evidence base; and Section 10 presents the conclusions and recommendations.

The report draws on three kinds of material. Program data on farmers reached, advisories dispatched, seed supplied and costs come from the records of IWMI and the DAD at the Nagollagama Agrarian Service Center, compiled by the IWMI Sri Lanka team between Yala 2025 and June 2026; the yield comparison was collected by IWMI and Department field staff from 100 supported and 100 comparison farmers at the Yala 2025 harvest. Institutional and policy facts are taken from published government performance reports, company annual reports and press coverage, each cited in the text. International evidence is drawn from peer-reviewed studies and agency reports identified through a structured literature search in October 2026. All sources are listed in the References; internal records that are not yet published are identified as such.

Section 1

Sri Lanka's climate services gap

Sri Lanka's farmers will plant the 2026–2027 Maha season under one of the strongest El Niño events on record, eleven months after Cyclone Ditwah, and with a national meteorological service that has no direct route to the people who most need its forecasts.

WMO's global producing centers put the probability of El Niño persisting through February 2027 at close to 100%. The event is expected to strengthen further, reaching very strong intensity and peaking in late 2026. FAO, using information from the Department of Meteorology, anticipated below-normal rainfall across the dry zone in July and August, as subsequently occurred, followed by above-normal rainfall from October, raising the prospect of water scarcity giving way to flooding and waterlogging (Daily Mirror 2026b). The stakes are national: Maha accounts for 60–65% of the country's rice production, about 70% of the paddy area lies in the dry and intermediate zones, and the 2025 harvest of 5.05 million metric tons was only broadly sufficient to meet domestic demand (CBSL 2026; Daily Mirror 2026b). The Cabinet Subcommittee on El Niño has already advanced sowing dates to protect young plants from excess rain. A climate information service is intended to ensure that such guidance reaches farmers in time and is tailored to local conditions, including their irrigation tank and rice variety.

Cyclone Ditwah struck in late November 2025, bringing about a tenth of the country's annual rainfall in a single day and causing an estimated USD 4.1 billion in direct damage, equivalent to around 4% of GDP. Agriculture accounted for USD 814 million of this damage; close to two million people across all 25 districts were affected (Daily FT 2025b; Amarnath and Amarasinghe 2026). CIC Holdings, the country's largest agricultural input company, reported that the storm disrupted Maha cultivation and pushed parts of its farming operations into loss (Daily FT 2026). During the emergency, the National Emergency Operations center used IWMI's AWARE platform, launched with the Disaster Management Center in May 2025 (IWMI 2025). This was the first time a CGIAR forecast product had been incorporated into a Sri Lankan emergency decision-making process (CGIAR 2026). The forecast layer has demonstrated its value at the national level. The task now is to extend it to the field.

The Department of Meteorology is financed entirely through Treasury releases, had 113 of its 462 approved posts vacant in 2024, operates 23 regional stations, and will not have weather radar until the JICA-funded Puttalam Doppler system arrives in 2027. Its climate records, dating back to 1861, are still held on paper (DoM 2024; JICA 2024). Within these constraints, it produces a range of useful products: seasonal and monthly outlooks, weekly agrometeorological bulletins, a monthly national agro-advisory and, in 2023, 31 products for the insurance sector (DoM 2024). However, it lacks an effective channel for delivering this information to farmers at the last mile (**Figure 1**). The route to Sri Lanka's 1.9 million paddy farmers lies with the DAD, whose 565 Agrarian Service center, 17,575 farmer organizations and GeoGoviya land register already support the delivery of the fertilizer subsidy and cultivation calendar to villages across the country (DAD 2024; IWMI 2024). The two departments do not operate as an integrated system. In September 2026, decisions on Maha water allocation for 302 major irrigation schemes were reported, with El Niño identified as the central concern. However, the report made no mention of input from the Department of Meteorology (The Morning 2026).

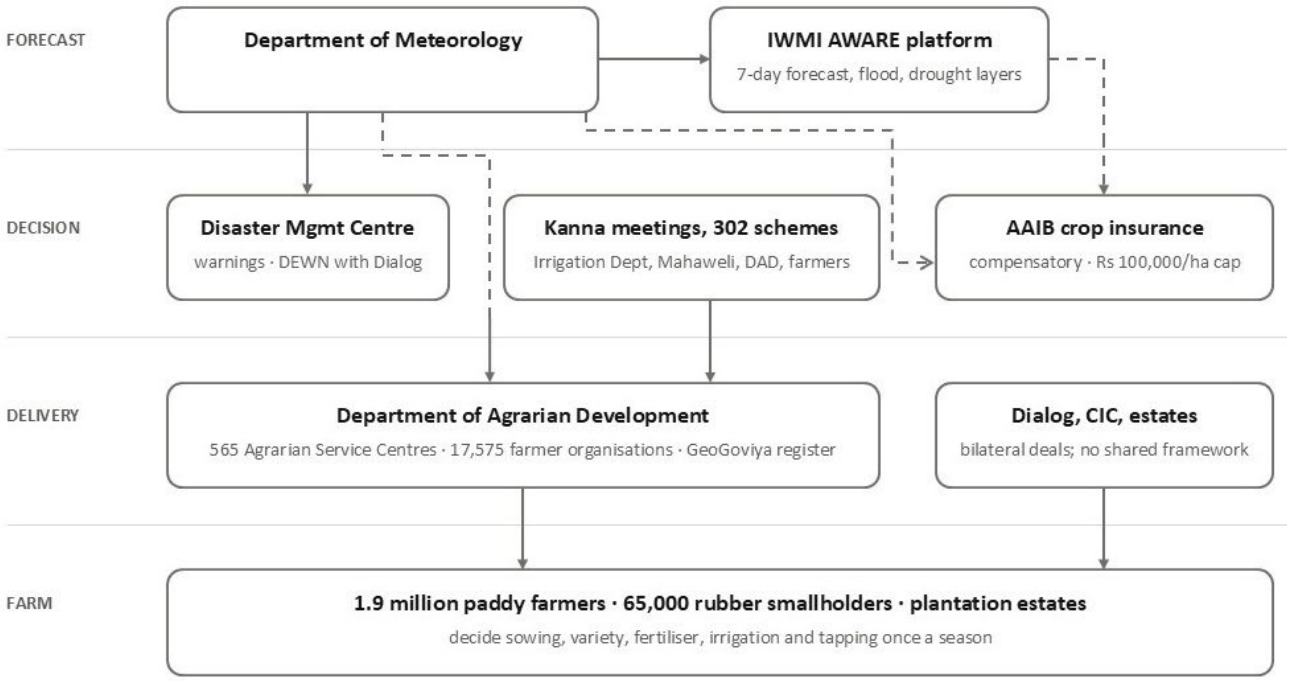

Figure 1. Sri Lanka's public climate-information system for agriculture and its three broken links

The National Adaptation Plan 2016–2025 identified timely climate information for farmers as a priority (Government of Sri Lanka 2016); the 2016 World Bank hydromet roadmap recommended open data exchange and partnerships with private providers (World Bank 2016); and DAD's own plan for GeoGoviya Phase II provides for integration with the Department of Meteorology to enable farmers to receive forecasts through the register (DAD 2024). What is missing is a working demonstration of how public forecasts, public delivery and private capability can be brought together at the scale of an Agrarian Service center. Since 2021, IWMI and its partners have been building precisely such a model in Kurunegala District. This report describes what has been established, what it has achieved and how it could provide the basis for a national framework.

Section 2

A partnership model for climate information services

Climate information reaches a farmer through a chain of seven activities, and no single institution in Sri Lanka performs more than three of these stages. IWMI's framework for the National Dialogue on Public-Private Partnerships for Climate Information Services treats the service as a chain rather than a product. This is because the policy question is not simply who issues the forecast, but who carries it across each link, under what commercial logic and with what accountability.

The seven stages run from observation and modeling, through calibration into indices and translation into sector-specific advice, to last-mile delivery, decision integration and risk transfer **(Figure 2**). Each stage belongs to one of three tiers of ownership: a public-good core (observation, prediction and authoritative warning, paid from taxes); a shared layer (translation, validation and the farmer register, co-funded by the agriculture ministry and partners); and a private layer (bundling with seed, inputs, credit and insurance, and estate services, paid from the partner's own business).In Sri Lanka, the public sector is responsible for the first two and the last two: the Department of Meteorology observes and models; the Agrarian Service centers and cultivation (Kanna) meetings deliver advice and inform decisions; and the Agricultural and Agrarian Insurance Board carries risk through its compulsory and voluntary schemes (DoM 2024; GWP South Asia n.d.; SLYCAN Trust 2022). The private sector is also involved in delivery. Dialog Axiata, for example, operates Govi Mithuru for farmers, DEWN for disaster alerts and Sayura for fishermen under three separate bilateral agreements with public agencies (GSMA 2015; GSMA 2017; DoM 2024). The middle of the chain, where a national bulletin must be translated into advice that a farmer at an individual service center can act on, has been the weakest link. It is this gap that the Kurunegala partnerships address.

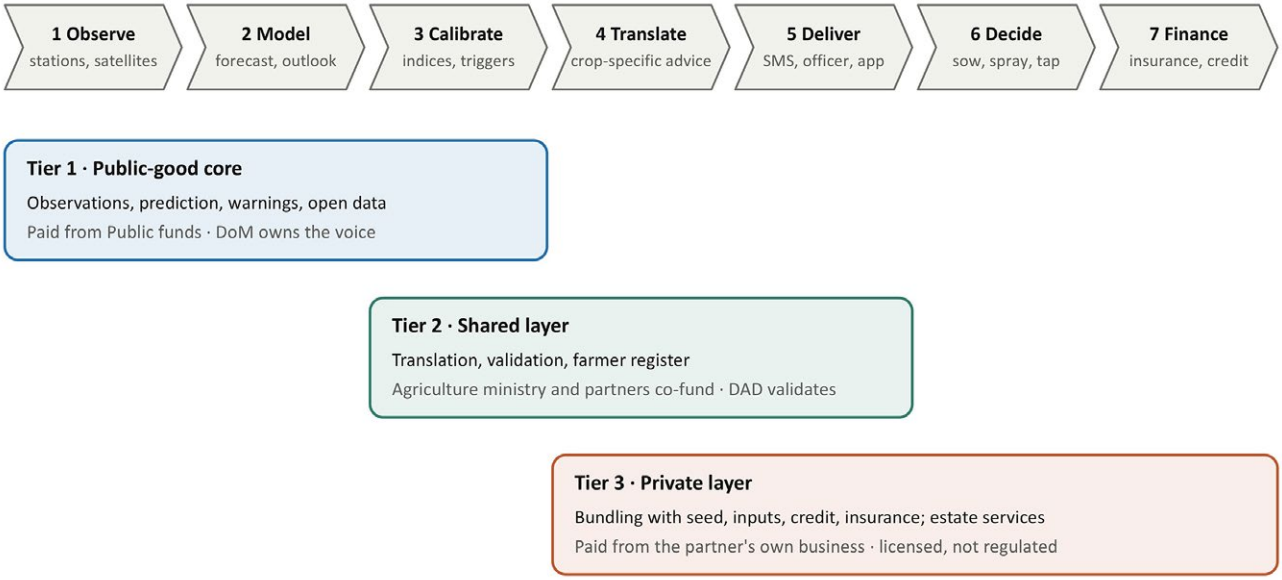

Figure 2. Partnership archetypes across the climate information services value chain, with the Kurunegala cases indicated. Source: Authors

Four partnership archetypes cover the chain, each spanning a different set of stages and operating under a different commercial logic. These archetypes are IWMI's own synthesis. Their closest documented equivalents in the international literature are WMO's data-as-a-service and infrastructure-as-a-service modalities, WRI's business-to-intermediary model and Winrock's finding that business-to-business-to-consumer is the most common arrangement among African weather enterprises (WMO 2023; WRI 2021; Winrock 2018).

Case	Public Role	Private Role	Scale and Outcome	Archetype
Esoko–Vodafone, Ghana (2015–)	Ghana Meteorological Agency supplies forecasts; the Council for Scientific and Industrial Research (CSIR) and the Ministry of Food and Agriculture quality-check advisories.	Esoko translates and delivers advice by voice, SMS and call center; Vodafone enrolls subscribers in its Farmers' Club at USD 0.20 per month, charged through airtime.	Grew from 1,000 pilot farmers to more than 300,000, of whom 274,321 pay; the operator, rather than the advisory firm, carries the acquisition cost (CCAFS 2019).	White-label delivery
ANACIM–Jokalante–Meteo-Mbay, Senegal (2011–)	ANACIM, the national agency, produces forecasts and convenes multidisciplinary working groups at the district level.	Private firms translate and deliver advice by voice and radio; revenue comes from input dealers, cooperatives and NGOs rather than farmers.	Reaches about 500,000 farmers and fisherfolk; functioning local working groups increased the income value of forecasts by 10–25% (CCAFS 2022; WRI 2021).	White-label delivery (intermediary-funded)
Skymet and crop insurance, India (2011–)	India Meteorological Department retains responsibility for the authoritative forecast; state crop insurance schemes define the index.	Skymet installs and operates automatic weather stations, including 150 under one NABARD-financed project, enabling insurers to settle claims automatically using the data.	Weather data becomes a paying public good; private observation networks expand where public coverage is limited (NABARD n.d.).	Parametric risk infrastructure
Kenya Livestock Insurance Programme (2015–)	Government pays 100% of the premium for five animals per pastoralist household.	Seven insurers, reinsured by Swiss Re, make payouts based on a satellite-derived forage index.	In February 2017, approximately USD 2.1 million was paid to 12,064 pastoralists; the state acts as the anchor buyer of index services (ILRI 2017).	Parametric risk infrastructure
DEWN, Sri Lanka (2009–)	Disaster Management Center verifies each threat and authorizes every alert.	Dialog Axiata delivers alerts to subscribers; a university and a software SME have contributed in kind.	Operating for more than fif een years; extended to all four mobile operators under a 2023 MoU (GSMA 2015; Daily FT 2023).	White-label delivery
Hungarian Meteorological Service open-data reform	Government mandated open access to core data and adjusted the service's budget to compensate.	Private firms develop products using the open data.	Budget support for the service rose from 20% to 85% of its funding following the mandate (WMO 2023).	Climate data commons

Table 1. Country-specific public and private role models to achieve the outcome.

Six lessons follow for Sri Lanka, each with a direct bearing on how the Kurunegala partnerships should be formalized.

1	the public agency must own the content and the private partner the channel, and this division must be documented. The partnerships in the table with the longest operating record, Esoko–Vodafone in Ghana and DEWN in Sri Lanka, both follow this structure; DEWN provides the domestic example. At Nagollagama, DAD's validation of each message is equivalent to the Disaster Management Center's authorization of each alert, and this responsibility should be documented in the same way.
2	revenue must be anchored in an intermediary or in government, not in the farmer. Esoko's paying subscriber base exists because Vodafone deducts a nominal fee from airtime and carries the cost of enrollment; Senegal's firms a e paid by input dealers and cooperatives; and Kenya's insurers are paid by the state. Farmer subscriptions alone have not sustained any service documented in the literature, while fee-based access excludes subsistence and women farmers (Hansen et al. 2022). For Sri Lanka, this means that CIC, KVPL and, in due course, the Agricultural and Agrarian Insurance Board should be the paying partners while the basic advisory delivered through the public channel remains free.
3	build on an existing public asset rather than alongside it. The Ghana partnership builds on the national meteorological agency, Kenya's on the livestock registry and India's on the insurance scheme. Sri Lanka's equivalent assets are GeoGoviya, the agrarian service centers and farmer organizations. This is why the Nagollagama model costs about one dollar per farmer. Services that built their own enrollment and delivery systems from scratch, such as Nokia Life, did not survive their sponsor's change of strategy (GSMA 2013).
4	open core data and compensate the agency. Hungary shows that an open-data mandate can strengthen the national service's funding rather than weaken it. India's experience, where insurers developed private station networks because public data were sparse or closed, illustrates the alternative (NABARD n.d.). A tiered data license for the Department of Meteorology, accompanied by an appropriate adjustment to its Treasury allocation, would be the Sri Lankan application of this lesson.
5	co-produce advice with the people who will use it. Senegal's district working groups increased the measured income value of the same forecast by 10–25% (CCAFS 2022). The Aruna Farmer Organization's role in validating each Nagollagama advisory is an example of this mechanism on a smaller scale. The same approach should be adopted at every center that takes up the model.
6	plan the transition from donor financing at the outse , and design the evaluation before the fi st message is sent. Partnerships that ended, including India's District Agromet Units and the early Esoko model, did so when their grant or project funding ended and, in Esoko's case, when revenue shares from mobile operators proved insufficient o sustain the service (MoES 2025; GSMA 2012). Partnerships whose effects can be demonst ated are those that established a comparison group before launch (Tall et al. 2018). Sections 8 to 10 apply these lessons to the Kurunegala program.

Section 3

Nagollagama: from a bundled pilot to a public advisory service

Nagollagama is a dry-zone agrarian service center in Kurunegala District, in the intermediate-to-dry transition zone, where tank-fed paddy depends on the Maha rains and where a failed or delayed monsoon is felt within a single season. IWMI's engagement there began in 2021 and has passed through three distinct phases, each building on the foundations laid by the previous one (**Figure 4**).

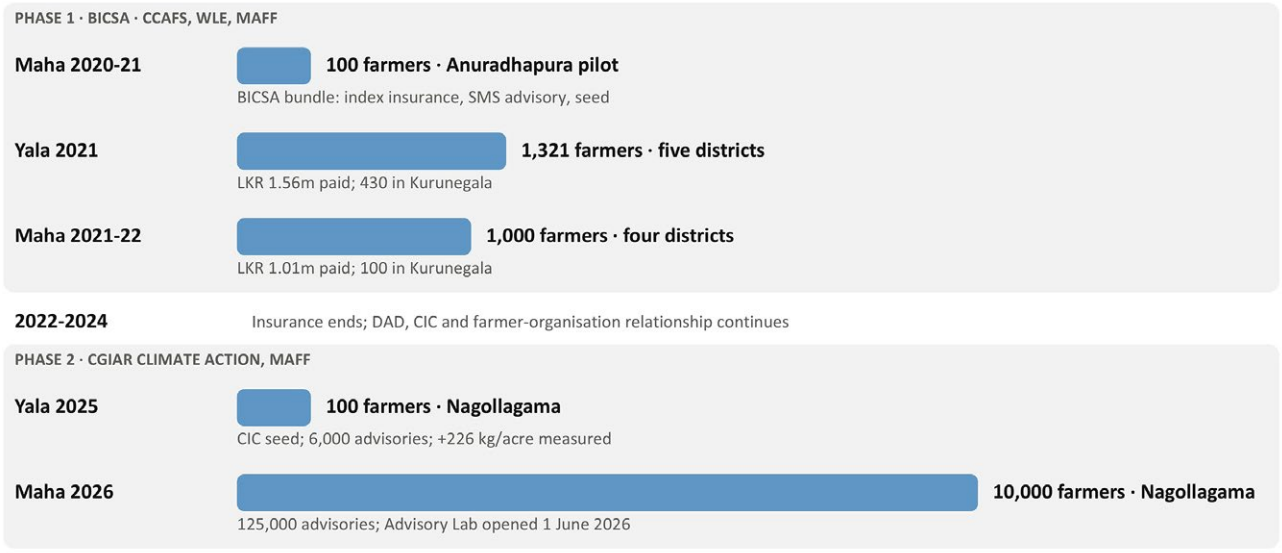

Figure 4. Farmers reached per season at Nagollagama and the wider BICSA pilot, 2020–2026 · Amarnath et al. 2023; IWMI 2021, 2026a

The first phase was BICSA, the Bundled Solutions of Index Insurance with Climate Information and Seed Systems, developed under the CGIAR Research Program on Climate Change, Agriculture and Food Security, with support from the Water, Land and Ecosystems program and Japan's Ministry of Agriculture, Forestry and Fisheries (Figure 4). Piloted with 100 farmers in Anuradhapura in Maha 2020–2021, it was extended in Yala 2021 to nine villages across five dry-zone districts, reaching more than 1,300 farmers, about 40% of whom were women (IWMI 2021). Each farmer received a weather-index insurance policy based on satellite rainfall data, with drought and flood triggers, twice-weekly SMS forecasts and agronomic advice, as well as climate-resilient rice seed of the BG 352, BG 300, BG 358 and AT 362 varieties. Sanasa General Insurance underwrote the coverage, CIC supplied the seed, and the DAD co-implemented the program through its service centers. In Kurunegala, three Grama Niladhari divisions were enrolled in Yala 2021 and one in Maha 2021–2022. Farmers in Kurunegala received $2,830 and $864 (1$ = 198 LKR) in payouts in the two seasons, respectively, against national totals of $7,882 and $5,111 (Amarnath et al. 2023). These payouts, received in a year when the rains failed during the first half of the season, helped secure the farmer organizations' trust in a service that provided information about the weather before it happened.

The second phase consolidated the advisory service. When the research funding cycle ended, the insurance component came to a halt, but relationships with the DAD, CIC and the Aruna Farmer Organization continued. In Yala 2025, with support from CGIAR Climate Action and MAFF, 100 Nagollagama farmers received CIC seed at a distribution held on September 30, 2025, and about 6,000 advisories over the season (**Figure 4**). CIC agronomists also briefed them on drought management (IWMI 2026b). IWMI compared these 100 farmers with 100 non-beneficiary farmers in the same area. The comparison farmers were drawn from the same service-center register and cultivated in the same season and locality, but the two groups were not matched on holding size, seed variety, irrigation status or prior-season yield. The yield difference should therefore be read as the combined effect of seed, advisory and field support; the matched evaluation described in Section 9 is designed to isolate the contribution of each. The data collection was carried out in the field with the crop-cutting experiment by officials from the Nagollagama Agrarian Service Center. The supported group harvested 122 bushels per acre, or 2,501 kg, compared with 111 bushels, or 2,275 kg, among the comparison group: a gain of 226 kg per acre, worth about LKR 27,100 at the Paddy Marketing Board's guaranteed price of LKR 120 per kg for Nadu (IWMI 2026a; Daily Mirror 2026a). An intensively supported cohort of ten farmers, who received close field supervision from CIC and IWMI staff, harvested 130 bushels per acre, or 2,665 kg, a gain of 390 kg per acre worth about LKR 46,800, against LKR 6,000 in additional inputs (IWMI 2026a). Farmers described the change in their own terms (**Figure 5**). Sardha Dayanshani, secretary of the Aruna Farmer Organization, explained that they practiced fertilizer application and land preparation around the advisory. C. Dayawathi, the division's agriculture research and production assistant, spoke of moving away from traditional practices and achieving better standards, and expressed her hope of bringing a larger group of farmers into the next season (IWMI 2026a).

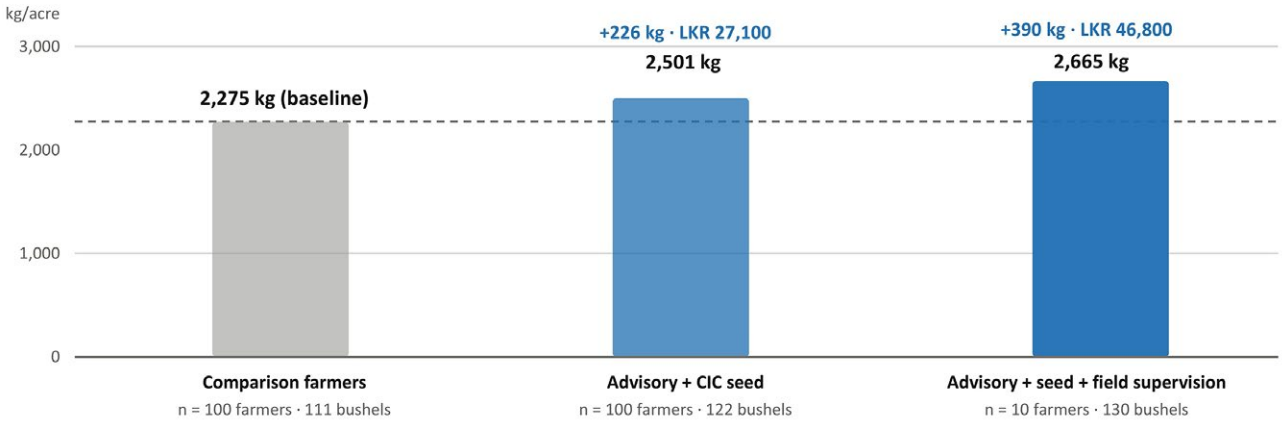

Figure 5. Paddy yield per acre by group, Yala 2025, Nagollagama · IWMI 2026a and program records

The third phase was institutionalization. In Maha 2026, the service center sent more than 125,000 advisories to nearly 10,000 farmers, reaching every paddy grower on its register. This represented a hundredfold increase in reach between two consecutive cultivation seasons (IWMI 2026a). On June 1, 2026, IWMI's Board Chair and Director General, together with the District Secretary of Kurunegala, opened an Agro-Climate Advisory Laboratory inside the service center and released the first water through a rehabilitated irrigation canal. IWMI had funded the canal rehabilitation at LKR 2 million in response to farmers' identification of deteriorating canals as their main constraint (IWMI 2026b; IWMI program records 2026). The laboratory consists of a room, a computer, a trained DAD officer and a bulk-SMS contract. It is also the first permanent physical presence of a climate advisory function inside a Sri Lankan agrarian service center. Two neighboring centers, at Mahawa and Polpithigama, have since formally requested the same service (IWMI 2026a).

The service follows a five-step pipeline designed by IWMI to put the public officer at the point of publication (**Figure 6**). IWMI's AWARE platform assembles a seven-day forecast for the center's area; the forecast is translated into plain Sinhala guidance; field officers record crop conditions and growth stages; weather information, crop stages and agronomic recommendations are combined into a tailored advisory, which the DAD and service-center officers validate with the farmer organization; and the message is sent to every registered farmer's phone in bulk-SMS twice a week (IWMI 2026a). The fourth step distinguishes this from a weather alert and gives the message its authority. The officer who signs it is the officer the farmer meets at the center; the organization that checks it is the one the farmer belongs to. This design choice is also the principal cost of replication, because it requires a trained officer at every center that adopts the model. It is also why the program invested in training before expanding the service.



Figure 6. The five-step Nagollagama advisory pipeline, with the public point of publication marked (Source: Authors)

IWMI's direct cash investment in Nagollagama over the five years was approximately USD 11,000, excluding staff time, the AWARE platform and the canal (IWMI program records 2026). Set against the 10,000 farmers reached in Maha 2026, this amounts to roughly one dollar per farmer. Set against the measured gain of USD 82 per acre among the 2025 cohort, it represents the strongest cost-effectiveness ratio in IWMI's Sri Lanka portfolio. The ratio is favorable precisely because the largest inputs, the DAD officers' time, the farmer register and the farmer organizations, were already in place and publicly funded. That is the central lesson of Nagollagama for a national framework: the forecast is inexpensive to reproduce, while the public delivery infrastructure is the asset.

Section 4

CIC: the input-side anchor

CIC Holdings has been part of the Kurunegala program since the first bundled season in 2021, and its continued participation reflects a clear alignment of interests: a climate advisory that raises yields on certified seed strengthens the case for certified seed. CIC is Sri Lanka's largest supplier of seed paddy, holding about 40% of the certified market and about a quarter of the conventional fertilizer market, and its Crop Solutions business earned LKR 33.2 billion in the year to March 2025, which is 40% of group revenue (Sampath Securities 2026; CIC Holdings 2025). The company operates the largest privately managed seed farms in the dry zone, at Hingurakgoda, Pelwehera and Talawa, works with more than 10,000 outgrowers under buy-back arrangements across its crops, and paid LKR 2.78 billion to its outgrower networks in 2023–24 (LMD 2026; CIC Holdings 2024). Its 2023–2024 annual report records partnerships with agrarian service centers on smart agriculture practices in paddy, and its Agri Hub app carries crop calendars, agro-climatic data and photo-based diagnosis by company agronomists (CIC Holdings 2024; Daily FT 2024).

At Nagollagama, CIC's contribution has three components. It supplies climate-resilient seed: 2,100 kg for the 100-farmer cohort in Yala 2025 and the same quantity for Maha 2026 (IWMI program records 2026). Its field agronomists brief farmers at seed distribution and, for the intensive cohort, follow the crop through the season. It also brings the credibility of a brand that farmers already buy from, which matters for the uptake of advice. The 2021 design envisaged CIC buying back grain from participating farmers to close the loop between seed, advisory and market (IWMI 2021); that element remains available for the next phase.

The results from the two cohorts are the most instructive findings in the program. The 100 farmers who received CIC seed and the twice-weekly advisory gained 226 kg per acre; the ten who received the same seed and advisory with close supervision from CIC and IWMI field staff gained 390 kg per acre, for additional input costs of about LKR 6,000, against about LKR 46,800 in additional income (IWMI 2026a). Since seed and advisory were identical in both groups, the difference indicates the value of field-level follow-up, although the ten formed a separate cohort and differences in land quality, irrigation conditions and farming practice between them and the wider group were not controlled. It points to where the next investment in the model should go: not more messages but a stronger link between the message and a person who can confirm what it means for a particular field. This is consistent with the international evidence that digital advice changes outcomes most when it is specific and followed up (Fabregas et al. 2019), and defines the commercial space in which an input company contributes a distinct component of value that complements public advisory services.

The public interest in the partnership is substantial. Certified seed covers only about 15% of Sri Lanka's paddy area, compared with the government target of 25%, and the yield gap between certified and farmer-saved seed is large (Ministry of Agriculture 2025). Every service center that adopts the Nagollagama model moves its farmers toward purchased seed of varieties that match the season's forecast, which is a national seed-policy objective pursued through a commercial channel. In return, the model gives CIC a demonstrated yield case, a traceable grain supply, and a relationship with the agrarian service centers that no advertising campaign could achieve.

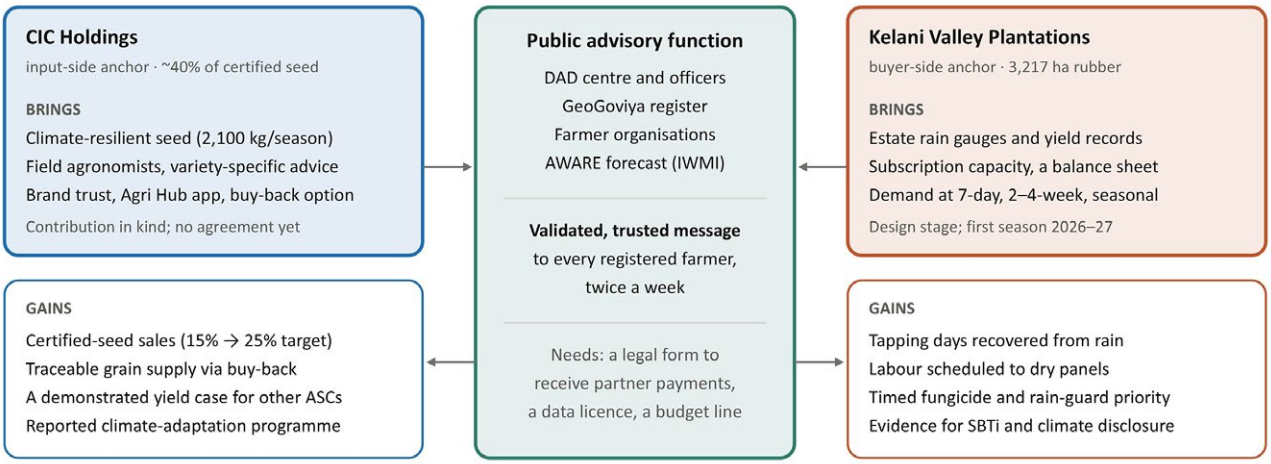

Figure 7. What each anchor tenant brings to, and gains from, the public advisory function. (Source: Authors)

The partnership so far has operated on the strength of the relationships built since 2021 rather than on a formal instrument, which has served the pilot well but will not serve a district or national program **(Figure 7)**. Three elements will make it durable: a memorandum between CIC and the DAD, or CIC and the service center setting out what each supplies, how farmer data is used and how the laboratory's running costs are shared, a labeling convention identifying recommendations specific to a CIC variety while ensuring that the DAD officer's sign-off continues to establish the advisory as public; and a reporting line in CIC's own sustainability disclosure, which already ranks climate change as its second most material topic and lists climate adaptation and resilience beneath it (CIC Holdings 2025).

Section 5

Kelani Valley Plantations: the buyer-side anchor

IWMI's collaboration with Kelani Valley Plantations PLC extends the model beyond smallholder paddy into the plantation economy, bringing in a listed company with estates, a workforce, a balance sheet and a direct commercial stake in the weather. The partnership is at the design stage, and its first season is planned for 2026–2027.

KVPL is part of the Hayleys plantations group. Group revenue in 2025-2026 was LKR 19.4 billion, with 85% from tea and 14% from rubber. KVPL manages 13,128 hectares across 25 estates in three agro-climatic regions, of which 3,217 hectares are under rubber and 2,972 under tea. The company employs more than 7,000 people, has had its science-based emissions targets validated and has a net-zero commitment for 2049. It has also invested in AI-enabled plantation data systems and drone-based agronomic monitoring (KVPL 2026). Its annual report identifies rubber as the crop facing the greatest climate-related vulnerability, while the Hayleys plantations sector as a whole rates climate risk as high. Rainfed crops and rubber output fell sharply in the last quarter of 2025 because of unfavorable weather (KVPL 2026; Hayleys 2025).

Rubber is the crop in which a rainfall forecast may have the most immediate cash value, because rain interrupts tapping. Latex is collected by cutting the bark early in the morning. Wet bark can dilute the latex and wash it from the cut, while prolonged wet weather increases the risk of panel diseases that damage the tapping surface. The former director of the Rubber Research Institute has estimated that about 72 tapping days a year are lost to rain in Kalutara and Ratnapura.

The Colombo Rubber Traders' Association puts the number of untapped days at close to 100 a year in some cases (**Figure 8**). The government has withdrawn its rain-guard subsidy, while a USD 14 million Asian Development Bank grant for countrywide rain guarding has been secured to help address part of the gap (Tillekeratne 2017; Daily FT 2025a). National production fell below 70,000 metric tons in 2024, its lowest level on record, and stood at 66,492 tonnes in 2025 (Daily FT 2025a; EDB 2026). For an industry losing substantial tapping time to rain and with a tapper workforce that is mostly over fifty, forecasts that help identify suitable tapping days could have clear operational value.

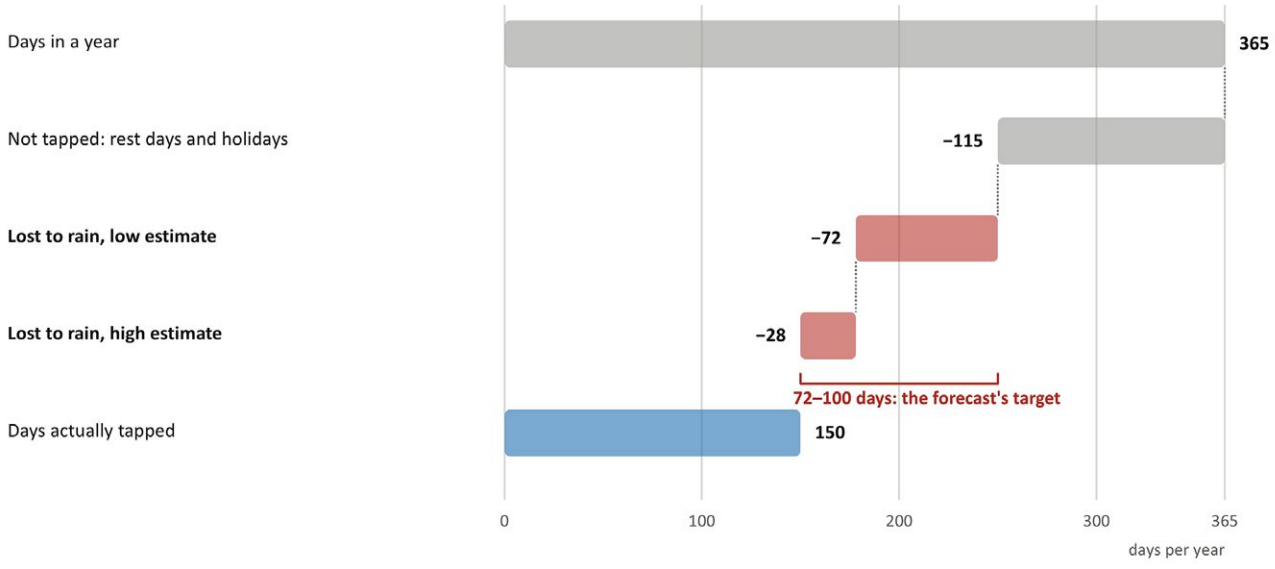

Figure 8. Illustrative tapping-day budget for a wet-zone rubber estate · Tillekeratne 2017; Daily FT 2025a

The service IWMI has designed with KVPL is intended to operate at three lead times. A seven-day rainfall forecast from the AWARE platform, downscaled to each estate division, would help schedule tapping rounds and tapper deployment, reducing the likelihood of sending labor to wet panels on days when tapping cannot proceed. A two-to-four-week wet-spell outlook would help time fungicide applications to manage panel diseases and prioritize where rain guards should be installed first. A seasonal outlook would inform annual tapping intensity, since over-tapping to recover rain-related losses can itself cause tapping-panel dryness, which already affects more than half the trees on some estates (Tillekeratne 2017). The value proposition can be illustrated arithmetically. Across 3,217 hectares, recovering even one-tenth of the tapping days lost through better scheduling, without installing additional rain guards, would amount to approximately seven to ten additional days of production a year.

The commercial logic is that of a business-to-business anchor tenant. An estate company has a cost center for tapping labor, a revenue stream from latex, its own estate rain gauges and yield records, and a sustainability report that already commits it to climate adaptation. It can pay a subscription, enter into a data-sharing agreement and contribute its observations to the national record, none of which a smallholder can readily do. These capacities make an estate company a potentially stronger commercial partner for the service than an individual smallholder. Evidence from GSMA's review of digital agricultural services suggests that crops harvested repeatedly, such as tea and cocoa, generate more frequent opportunities for digital procurement and payment transactions than annual crops (GSMA 2023). Rubber, tapped on alternate days through most of the year, offers a particularly strong case for frequent, operationally relevant climate advisories.

The public interest runs in two directions. Estate rain-gauge data, if shared under agreed terms, could strengthen the observation network the Department of Meteorology currently lacks and provide a better baseline for downstream users. In addition, the 65,000 rubber smallholders who produce about 70% of national output (Daily FT 2025a) could potentially receive, through the Rubber Development Department and the Thurusaviya Fund, a service adapted from the one developed with KVPL. This would allow the benefits of the service to extend beyond the estates without requiring development of an entirely separate service. The Hayleys group alone manages 55 estates across three plantation companies (Hayleys 2025). If the first season with KVPL establishes a viable subscription model, the service could then be offered to the group's other plantation companies.

Section 6

What the three cases show together

Taken together, the three partnerships form a working prototype of a national climate services architecture: one public delivery rail, one shared forecast platform and two private anchors with different commercial motives, all operating in a single district under a common set of relationships (**Table 2**). The comparison below sets them side by side across the dimensions that determine how each can scale.

Type	Nagollagama ASC	CIC Holdings	Kelani Valley Plantations
Archetype	White-label delivery on the public rail	Anchor tenant, input side	Anchor tenant, buyer side
Users	~10,000 paddy farmers on one center's register	100 farmers, plus a separate cohort of 10 under intensive field supervision, on CIC seed; CIC's wider service-center partnerships	Estate management and ~7,000 workers; rubber smallholders through RDD in a later phase
What each partner brings	Officers, farmer organizations, GeoGoviya register, validation	Seed, agronomists, brand trust, Agri Hub channel	Estate data, subscription capacity, a demand for forecasts at three lead times
Funding today	CGIAR Climate Action and MAFF through IWMI; DAD officer time	CIC in kind; IWMI for the advisory	IWMI design; first operational season 2026–2027
Funding at scale	DAD budget line for laboratory operation; forecast layer through CGIAR and MAFF	Cost-share on laboratory operation tied to seed sold through the centers	Per-estate subscription; RDD or ADB rain-guard program for the smallholder extension
Delivery channel	Service center, farmer organizations, bulk-SMS	Service center plus CIC agronomists and app	Estate management system
Validation	DAD officer signs every message	DAD officer; variety-specific content labeled	Estate agronomist; RRISL as technical reference
Evidence or Result to date	+226 kg/acre on 100 farmers, Yala 2025	+390 kg/acre on the 10-farmer intensive cohort	Quantified problem of 72–100 lost tapping days; first season pending
Potential Replication signal	Mahawa and Polpithigama have formally requested the service	Service-centere partnerships recorded in CIC's annual report	55 Hayleys estates across three companies

Table 2. Partnerships for National Climate Services Architectures.

Three conclusions follow.

The public rail is the scarce asset. All three partnerships draw on the same AWARE forecast layer; what differs is who carries the message the last mile. At Nagollagama a public officer delivers the service that reached approximately 10,000 farmers for about USD 11,000. This was possible because the officer, the farmer register and the farmer organizations were already in place and trusted. CIC and KVPL each bring their own channel. In the language of public economics, the forecast is a public good, expensive to produce and relatively cheap to reproduce. The delivery rail, by contrast, depends on institutional relationships, local knowledge and established channels of trust, all of which are costly to build and difficult to replicate efficiently (World Bank 2019). A national framework should therefore protect and fund the delivery infrastructure first.

The private anchors currently contribute in kind because there is no established mechanism through which they can pay for the shared advisory function. CIC provides seed, agronomists and credibility; KVPL is expected to provide data and, in due course, a subscription. Neither has yet contributed financially to the shared advisory service, which has no legal form, dedicated account or agreed pricing mechanism. Establishing a mechanism, whether an entity or a formal agreement, through which private anchors can pay for a service validated by a public officer, would be one of the most useful contributions of a national framework.

The evidence is promising, but remains uneven across the three partnerships. The widest reach, 10,000 farmers in Maha 2026, rests on a one-season comparison; the largest measured yield gain, 390 kg per acre, comes from a ten-farmer intensively supervised cohort; and the clearest commercial case, KVPL, awaits its first operational season. This is the profile of a program whose implementation has advanced faster than its evaluation. The planned matched comparison in the 2026–27 season, described in Section 9, is intended to address this gap.

Section 7

Costs, returns and who benefits

The advisory costs about USD 1.10 per farmer per season in cash and, where measured, has generated approximately USD 82 per acre (**Table 3**). The difference between these two figures is the economic case for the model.

Measure	Value	Source
IWMI cash investment at Nagollagama, 2021–2026	~USD 11,000	IWMI program records 2026
Farmers reached, Maha 2026	~10,000	IWMI 2026a
Cash cost per farmer reached	~USD 1.10	derived
Advisories dispatched, Maha 2026	>125,000	IWMI 2026a
Yield gain, 100 supported vs 100 comparison farmers	+226 kg/acre (+10%)	IWMI 2026a
Income gain per acre at the Rs 120/kg Nadu guaranteed price	~LKR 27,100 (USD 82)	IWMI 2026a, Daily Mirror 2026a
Intensive cohort: gain and added input cost	+390 kg/acre; LKR 46,800 vs LKR 6,000	IWMI 2026a
Irrigation canal rehabilitation	LKR 2,000,000	IWMI program records 2026
Index insurance payouts to Kurunegala farmers, 2021–22	LKR 560,239 and LKR 171,000	Amarnath et al. 2023

Table 3. The advisory and cost return for the beneficiaries

The cash cost is low because the two largest inputs were already funded for other purposes: the DAD officers' time, and the AWARE forecast layer, which CGIAR and MAFF maintain for national early warning. A full-cost accounting would add approximately a quarter of an officer's time per center and a share of platform cost, bringing the recurring cost of a laboratory at a service center to an estimated USD 5,000-8,000 a year. For comparison, the digital advisory services reviewed across Africa and Asia averaged USD 16.20 up-front and USD 1.75 recurring per producer (WRI 2021); the Nagollagama model sits well below that range because it rides on the public rail rather than building a parallel system (**Figure 9**).

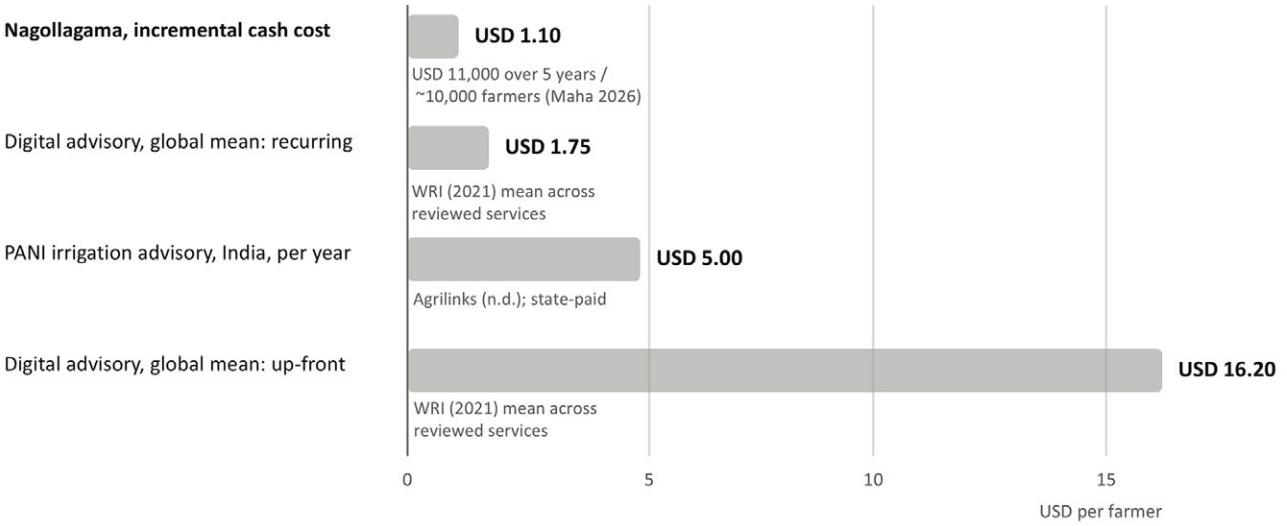

Figure 9. Cash cost per farmer, Nagollagama against international benchmarks · IWMI programprogramme records; WRI 2021

The returns are valued conservatively. All income figures use the Paddy Marketing Board's guaranteed Nadu price of Rs 120 per kg, which represents the floor; where the market pays more, the gain is larger. If one-fifth of the 10,000 farmers reached in Maha 2026, each farming an acre, obtained the measured gain from the advisory alone, the season's income effect would be in the region of LKR 54 million, or about USD 165,000, against a cumulative cash outlay of USD 11,000. The one-fifth assumption is deliberately cautious. Randomized evidence from Odisha, where customized advisory alone raised rice harvests by 4.1% and cut the probability of severe loss by 10%, rising to 21% in seasons of inadequate rainfall, suggests that the advisory's largest value is realized in exactly the kind of season Sri Lanka now faces, and the long-run benefit-cost ratio in that trial was estimated at between 12:1 and 19:1 (VoxDev 2025). A ratio in that range is a reasonable planning assumption for a service using the DAD infrastructure.

The benefits are shared across the chain. Farmers capture the grain. CIC captures seed sales in a market where certified seed covers only 15% of the paddy area against a 25% national target (Ministry of Agriculture 2025). The state benefits from a steadier Maha harvest in an El Niño year, a larger procurement base for the Paddy Marketing Board, and potentially lower relief expenditure. An estate benefits from additional tapping days and labor efficiency. The precise distribution of these benefits across the different parties has not been quantified here or in the international literature. Establishing it for Sri Lanka would be a contribution in its own right, as Section 9 proposes.

The insurance layer has a distinct economic role. The 2021–2022 bundle paid LKR 2.57 million across five districts on premiums of LKR 2,500 to 2,700 per farmer. Insurer administration costs were about LKR 20 per LKR 100 of premium, which digital delivery could reduce by around 30% (Amarnath et al. 2023). Pooled experimental evidence shows that index insurance alone raises farm investment only modestly (World Bank 2022); its value in the Sri Lankan architecture lies elsewhere: in creating a paying institutional buyer for forecast and observation data and giving farmers a reason to remain on the register between seasons. That is the role a revived parametric layer should be designed to play.

Section 8

The enabling framework

What the Kurunegala partnerships have demonstrated in practice now needs to be secured in writing. The requirements are modest in legal terms: a circular, three agreements, a data license and a budget line. Each addresses a failure mode that has brought a comparable service to an end elsewhere (**Figure 10**).

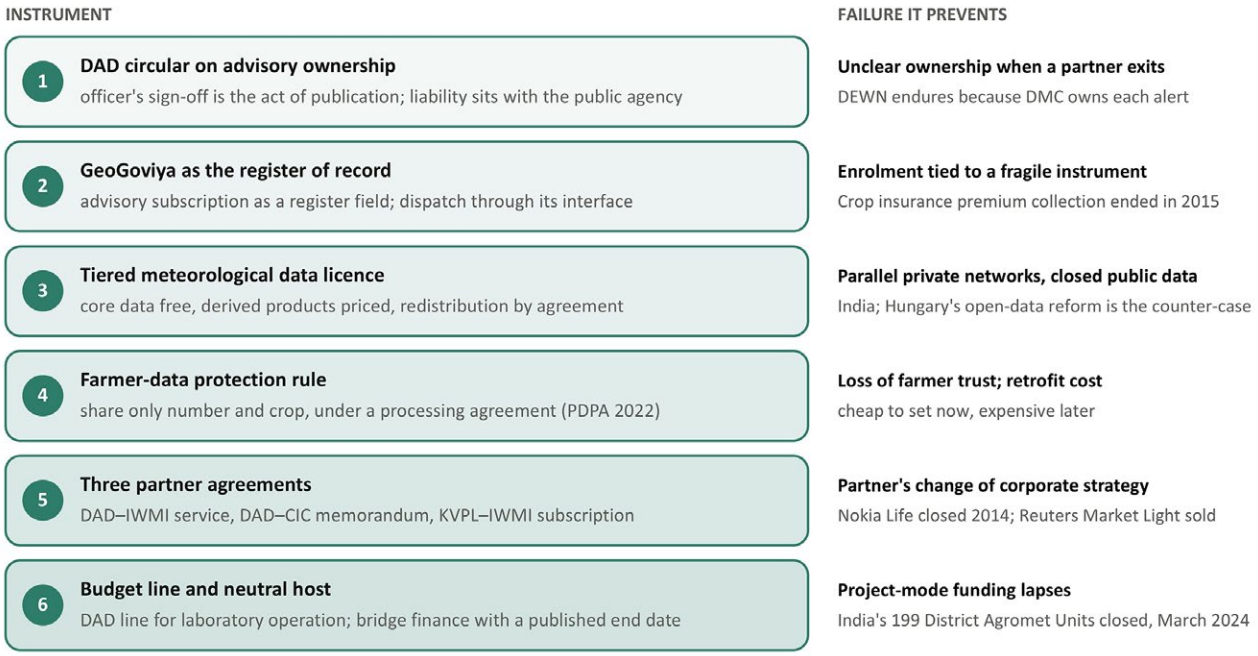

Figure 10. The six instruments of the enabling framework and the failure each prevents (Source: Authors)

The partnerships that have endured internationally, including Esoko and Vodafone in Ghana and DEWN in Sri Lanka, each had one public institution that owned the content and one partner that owned the delivery channel (CCAFS 2019; GSMA 2015). At Nagollagama, IWMI generates the forecast and draft advisory, the DAD validates them and its network delivers the service. A DAD circular should record that the Department owns and is accountable for every farm advisory dispatched from an agrarian service center; that IWMI supplies the forecast and draft advisory under a service agreement; and that the officer's sign-off constitutes publication. This settles the question of liability when an advisory proves wrong, placing it with the public agency, as it already is for warnings issued by the Department of Meteorology. It also allows the service to continue if any partner withdraws.

The Department of Meteorology sells data reports, issues products for the insurance sector and publishes agromet bulletins (DoM 2024), but no published policy sets out what a research institute, an input company or an estate may do with its observations and forecasts. The 2016 roadmap recommended open, real-time data exchange; WMO's Unified Data Policy treats core observations as free and unrestricted; and Hungary's experience, where budget support for the national service rose from 20% to 85% following an open-data mandate, shows that openness can strengthen rather than weaken the public agency (World Bank 2016; WMO 2021; WMO 2023). A tiered license, with core data available free of charge, derived products priced and commercial redistribution governed by agreement, is the appropriate instrument. It would also establish the terms on which KVPL's estate rain-gauge data could enter the national record.

The dispatch list that drives the Nagollagama service should be held in GeoGoviya rather than in a spreadsheet at the center. DAD's Phase II plan already provides for weather-forecast integration, and the CultivateX module handed over by IWMI in April 2024 provides the advisory hook (DAD 2024; IWMI 2024). The advisory subscription would become a field in the register, allowing it to survive the platform's planned migration to a government cloud account. The register would also expose an interface that the laboratory, and eventually a bulk-SMS gateway, could access directly. Sri Lanka's own experience with compulsory crop insurance, whose premium collection ended in 2015 when the fertilizer subsidy to which it was linked became a cash coupon, offers a cautionary example of tying a service to an administrative instrument that may change (Sunday Times 2012; Daily FT 2016).

The Personal Data Protection Act No. 9 of 2022 applies to the farmer register and to any list shared with a private partner. The working rule for the partnerships is that the DAD shares with CIC or a mobile operator only the information needed to provide the service, such as a phone number and crop, under a data-processing agreement, while CIC's own app data remains with CIC. Establishing this arrangement now would be inexpensive and much more costly to do retrospectively.

Three short instruments would complete the framework: a DAD–IWMI service agreement covering the supply of forecasts and draft advisories, with a transfer-of-capability clause requiring the DAD to operate the laboratory independently by an agreed date; a DAD–CIC memorandum covering seed supply through the centers, labeling of variety-specific advice, agronomist access, cost-sharing for laboratory operations and data use; and a KVPL–IWMI subscription agreement with a data-sharing annex. WMO's updated guidelines on public-private engagement provide templates for the legal framework underpinning such agreements and recommend that national legislation separate the regulator's role from that of the provider (WMO 2025; WMO 2020). Written agreements also provide protection against one of the most common causes of discontinuity in this field: a change in corporate strategy at the private partner. This ended Nokia Life in 2014 and led to the sale of Reuters Market Light (GSMA 2013; London Business School 2016).

The laboratory currently operates with funding from CGIAR Climate Action and MAFF through IWMI. The sequence that has worked elsewhere is donor bridge financing with a published exit date, followed by a government or intermediary contract (WRI 2021). The counterexample is India's 199 District Agromet Units, which were discontinued in March 2024 when their project-mode funding lapsed (MoES 2025). For Sri Lanka, this means establishing a DAD budget line for laboratory operations at adopting centers; Ministry of Agriculture funding for the Department of Meteorology's data supply, since the ministry captures the benefit (Hansen et al. 2019); and a neutral host for the multi-partner arrangement, which the Winrock review identified as a common factor in partnerships that survived disputes (Winrock 2018). The Cabinet Subcommittee on El Niño already brings together the relevant ministries and is the natural home for this role through the coming season. A standing body should succeed it. The guiding principle is the one stated plainly in the World Bank's review of hydromet partnerships: a public-private partnership is a financing arrangement, not a transfer of public obligations to the private sector (World Bank 2019).

Section 9

Strengthening the evidence base

The Kurunegala program has reached the point where its evidence should be as strong as its reach, and the Maha 2026–27 season offers an opportunity to achieve this. The yield results reported in Sections 3 and 4 are internally consistent, valued at the floor price and in line with the direction of the international literature. However, they come from a single season and a comparison group selected from the same area rather than from a matched or randomized sample. The program's design for the coming season addresses this limitation directly.

The evaluation will enroll at least 300 supported and 300 comparison farmers drawn from the GeoGoviya register and matched by tank, holding size and prior-season yield. Farmers receiving advisory-only support and those receiving advisory-plus-seed support will be recorded separately so that the contribution of each can be isolated. The evaluation will measure not only yield but also the outcomes that international evidence identifies as particularly sensitive to advisory services: the probability of severe loss, which the Odisha trial found was reduced by 10% overall and by 21% in seasons of inadequate rainfall (VoxDev 2025), and the share of farmers who read and act on a message rather than merely receive it, since registration-to-use ratios elsewhere range from 15% to 30% (WRI 2021). Women's share of active users and of measured benefits will be tracked separately, following the Senegal finding that income gains from seasonal forecasts were USD 56 for men and USD 11 for women (CCAFS 2022). The evaluation design is being finalized before the first message is dispatched, which the evaluation literature identifies as the single most important determinant of whether a climate service can later demonstrate its effects (Tall et al. 2018).

Two further studies will complete the evidence base. The KVPL season will record tapping days scheduled, lost and recovered on one estate against the forecasts issued. This will provide the first Sri Lankan measure of the value of a rainfall forecast to a plantation and a basis for pricing a subscription. A benefit-incidence study covering farmers, the input company, the estate and the state will address a question that the international literature has not answered for any country, and that Sri Lanka, with its public register, guaranteed price and dominant input supplier holding about 40% of the certified seed-paddy market, is unusually well placed to answer.

The program's public reporting has been consistent in the figures it uses. The 226 kg per acre result is the final analyzed value from the 2025 comparison and supersedes the rounded 300 kg figure reported during fieldwork earlier in 2026. The Kurunegala payout figures of LKR 560,239 and LKR 171,000 derive from the division-level tables in the 2023 Frontiers paper. The income calculations throughout use the Paddy Marketing Board's guaranteed price for Nadu (IWMI 2026a; IWMI 2026b; Amarnath et al. 2023). Figures for which the program's internal records are the only source, including the cash investment, canal cost, seed quantities and opening ceremony, are identified as such in this report and will be published with the 2026–2027 evaluation.

Section 10

Conclusions and recommendations

Five years of work in Kurunegala have produced what Sri Lanka's climate services policy has lacked since the 2016 hydromet roadmap: a practical demonstration, at the scale of a service center, of how public forecasts, public delivery and private capability can work together. This demonstration rests on three findings that the report has set out in turn.

The first is that the public delivery rail, not the forecast, is the decisive asset. The Nagollagama service reached nearly 10,000 farmers for an IWMI cash investment of about USD 11,000 because the agrarian service center, the farmer organizations and the GeoGoviya register were already in place, already trusted, and already publicly funded. Any national model should be built on this infrastructure and owned by the DAD.

The second is that private partners remain engaged when their own businesses give them a reason to do so. CIC has remained in the partnership since 2021 because an advisory that raises yields on certified seed strengthens the case for certified seed; Kelani Valley Plantations is joining because a rainfall forecast can recover tapping days. Neither needs to sell information. What they need is a mechanism through which to pay for a service validated by a public officer and that mechanism does not exist.

The third is that the model's reach has outrun its evidence, and the coming El Niño season offers the right opportunity to close the gap. The yield results are consistent, conservatively valued and in line with the international literature. However, they come from one season and one comparison. A matched evaluation in Maha 2026–2027, designed before the first message is dispatched, will establish the model on the terms required for a national business case.

One of the limitations of the study is that the information obtained from the Kurunegala Nagollagama Agricultural Service Center is that farmer organizations and farmers are already operational, trust weather information, and have good infrastructure for information sharing. Results may vary in areas where this public infrastructure is weak for advisory dissemination. Another limitation of the study is that yield gains are based on one season and one comparison without a matched or randomized design, so they may partially reflect differences between participating and non-participating farmers. A third limitation is that the Kelani Valley Plantations case is at design stage and reports no results, and that the accounts of the private partners' roles rest on IWMI records and public company reporting rather than on data supplied by the companies. Section 9 describes how the 2026–2027 evaluation is designed to address the first two limitations.

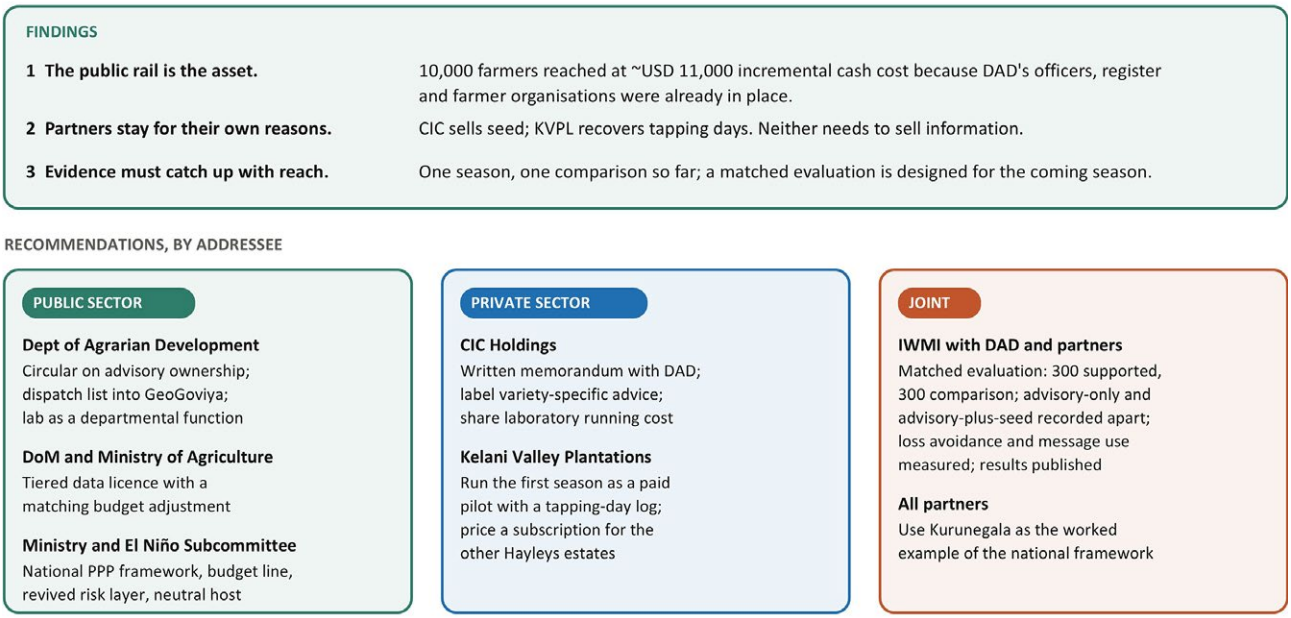

Figure 11. Findings and recommendations by addressee, for briefing use (Source: Authors)

The recommendations (**Figure 11**) that follow are addressed to the institutions whose decisions are needed to take the model forward.

1. **Department of Agrarian Development:** Issue a circular before the first Maha dispatch, confirming that the Department owns every advisory sent from a service center and that the officer's sign-off constitutes publication. Move the dispatch list into GeoGoviya as a subscription field; and treat the Nagollagama laboratory from this season as a departmental function supported by IWMI, rather than an IWMI project hosted by the Department. A service relied on by 10,000 farmers should not depend on a research grant.

2. **IWMI and the Department of Agrarian Development: Treat Maha 2026–2027 as the evaluation season rather than the next expansion**. IWMI and the Department will jointly design and conduct a matched comparison of at least 300 supported and 300 comparison farmers. Advisory-only and advisory-plus-seed groups will be recorded separately, with loss avoidance and message use measured alongside yield. The results will be published regardless of the findings. The Mahawa and Polpithigama officers will also be trained at Nagollagama during the live season so that replication follows the evidence rather than precedes it.

3. **CIC Holdings:** Formalize the partnership in writing through a memorandum with the Department covering seed supply through the centers, labeling of variety-specific advice, agronomist access, farmer-data terms and a contribution towards the laboratory's running cost. CIC is the strongest private anchor the model has, and its value depends on farmers continuing to recognize the advisory as public advice (**Figure 11**).

4. **Kelani Valley Plantations:** Operate the first estate season as a paid pilot rather than a demonstration, maintaining a log of tapping-days scheduled, lost and recovered against the forecast issued (**Figure 11**). A plantation company is the first partner in this model with the capacity to pay. The price it is willing to pay is the most useful single figure the program can produce for a national business case. It would also provide a basis for an offer to the other Hayleys plantation companies and, through the Rubber Development Department, to smallholders.

5. **Department of Meteorology and the Ministry of Agriculture:** Adopt a tiered license, with core observations available free of charge, derived products priced, and commercial redistribution governed by agreement. Accompany this with a budget adjustment, following the Hungarian precedent in which open data strengthened the national service's funding. The license would also establish the terms on which estate rain gauges and any future private network could enter the national record, laying the foundation for the data commons the model still lacks.

6 **Ministry of Agriculture and the Cabinet Subcommittee on El Niño:** Use the Kurunegala partnerships as the worked example for a national framework for public-private engagement in climate services, drawing on WMO's templates to define the public task, the data policy, the authoritative warning voice and regulatory role (WMO 2025). Establish a budget line for laboratory operation at adopting centers, with a published date for the end of bridge finance; revive the parametric risk layer with the Agricultural and Agrarian Insurance Board as its anchor buyer; and appoint a neutral host for the arrangement that will outlast the Subcommittee. The partnerships already cover the public rail, the input anchor and the buyer anchor. The framework's task is to add the data commons and risk layer that no single partner can build alone.

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