



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



USAID
FROM THE AMERICAN PEOPLE

Prize Call
Innovators
Handbook

**DATA DRIVEN
FARMING PRIZE**

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Acronyms

BFS	Bureau of Food Security (USAID)
CIMMYT	International Maize and Wheat Improvement Center
CPC	Challenge Prize Centre
CSISA	Cereal Systems Initiative for South Asia
FAQ	Frequently Asked Questions
FTF	Feed the Future
GODAN	Global Open Data for Agriculture and Nutrition
GDP	Gross Domestic Product
GPS	Global Positioning System
HCD	Human Centered Design
ICT	Information and Communications Technologies
ICIMOD	International Centre for Integrated Mountain Development
MIC	Microsoft Innovation Center
ODI	Open Data Institute
OFAC	Office of Foreign Assets Controls
T&Cs	Terms and Conditions
USAID	United States Agency for International Development

Glossary

Agriculture Value Chain is a concept that refers to the whole range of goods and services necessary for an agricultural product to move from the farm to the final customer or consumers.

Co-creation Event is a workshop which offers the possibility to co-create a solution with the target audience. This provides a great opportunity to test and refine the product based on the views and interactions of the people that are intended to use it.

Human Centered Design is an innovative method of designing processes or tools in which people, and in particular end users, are placed in the center of the planning and the design by involving them directly at each step of the concept and product/service development.

Personally identifiable information (PII) is any data that could potentially identify a specific individual. Any information that can be used to distinguish one person from another and can be used for de-anonymizing anonymous data can be considered PII. For example, full name, date of birth, or address.

Prototype is a first sample or early model of a product built to test a concept or process or function. A prototype aims to act as a demonstrator to be replicated or learned from.

A woman in a red sari is operating a tractor on a terraced hillside. In the background, two oxen are harnessed together, and a man is visible working on the terraces. The scene is set in a lush, green, hilly area.

Section I

Introduction

This handbook provides useful information and guidance for Applicants who wish to enter the Data Driven Farming Prize competition.

It gives an overview of the issue we are trying to tackle, the challenge statement and criteria that Applicants need to address and key aspects of the prize competition, including its timeline and stages.

It also contains important information to help Applicants understand the process that they are entering and what they can hope to gain in return. This handbook will help applicants understand how the prize competition works and the terms and conditions for participation.

Ia The Problem



Please note that this is a global call for solutions, so Applicants for this prize can come from anywhere around the world. Nonetheless, the solutions submitted will need to be relevant for Nepal, as they will need to be based on context specific outcomes to improve the agricultural productivity of Nepali farmers.

Global Perspective

There is a growing global concern about the challenges agricultural and food production need to overcome in the next few decades. By 2050, the world's population is expected to reach 9 billion--with over a billion at risk of hunger--and arable land is becoming increasingly scarce. Agriculture production worldwide needs to increase on roughly the same amount of arable land, while adapting to external shocks.

Agriculture and food industries contribute 3% to global GDP but more than 25% of GDP in many less developed markets. Additionally, developing countries suffer most from a lack of food security and low household incomes. For these reasons, one of the priorities under the Sustainable Development Goals is to achieve food security and improve livelihoods by raising smallholder farmers' productivity. New challenges also arise from weather, depletion of natural resources and the struggle to promote broad-based economic growth.

The "green revolution" led to a rapid worldwide increase in crop production over the last 50 years through the promotion of new technologies and good agricultural practices. Since the 1990s there has been a push for "Agricultural Knowledge Systems" to capture learning and promote best practices amongst farmers at scale.

Data-Driven Technologies

Thanks to the rapid global growth and increasing ubiquity of mobile and digital technologies, it is now possible to unleash a new farming revolution: one driven by data and information sharing.

Digital technologies have upended business models and expanded the frontiers of information access in the developing world, by, for example: delivering access to more efficient and cheaper payment and savings tools, bringing weather forecasts to actors throughout the agriculture value chain, and providing real-time pricing information to small-scale producers.

Increasingly available digital technologies including sensors, geospatial imagery, mobile financial services, and data analytics can be leveraged to make agriculture more precise, productive, resilient, and profitable. However, too often that data and analysis remains in research institutions and on computer servers rather than reaching farmers or those who work with them.

Data-driven agriculture is not a new concept. It first appeared in the 1980s, and since then it has grown to encompass many mainstream farmers in America, Canada, Australia and Europe. Yet the potential of these techniques and approaches has not yet come to fruition in less developed economies. For this reason, the competition will be a global call focused on a specific country (Nepal) context, creating the opportunity to source potentially relevant innovations from anywhere in the world and link them to a local context with specific opportunities and challenges for Nepali farmers.

I b Agricultural Productivity in Nepal



This is the primary area of focus for the Prize

Nepal is one of the poorest countries in the world. Agriculture contributes 34% of the national GDP and 70% of the population works in the sector. The country is ranked 25th in biodiversity with 118 ecosystems, 75 vegetation types and 35 forest types spread across plains, hills, and mountains. Nepal has the potential to be a food surplus country if smart, sustainable intensification that includes smallholder farmers can be realized. Currently, smallholder farming is focused on subsistence, rather than commercial markets. This means that increasing effective decision making can help intensify production and open new opportunities to connect to markets, generating significant opportunities for livelihood improvement. Nepal's location between fast growing India and China presents an untapped market opportunity and a potential path for sourcing and scaling technology innovations.

Agricultural techniques and productivity in Nepal are not fully developed. Nepalese agriculture is highly dependant on rainfall; the average fertilizer use is lower than in most other countries; there is a lack of quality seeds and poor access to quality inputs and services and limited basic infrastructure. Also, the two recent earthquakes severely compromised farmers' livelihoods and impacted the availability of water.

Innovative approaches, such as precision farming, are facing the challenge of sourcing and translating data into insightful information that farmers can use to make timely decisions to support their productivity and livelihoods.

Nepal also has a sufficient level of data connectivity and the political framework necessary to support the development of data communications solutions. Additionally, some early-adopter farmers appear willing to introduce technology into their production processes. There is a proliferation of apps for on-farm management including: soil nutrition, land cover, market prices, general crop management, yet widespread adoption has lagged.

Additional Factors that affect Nepali Farmers

- » Prices are low and variable.
- » There are significant post-harvest losses.
- » Nepal's natural resources are being over exploited.
- » Advisory services are in highly demand and costly.
- » The sector is experiencing labor shortage with large outflows of working age males to urban areas, India and overseas locations for jobs.
- » Women's role in agriculture is increasing in importance, but is not recognized with appropriate land titles, remuneration and job conditions.



Our objectives

There is a need to:

- » Support local agricultural production through sharing knowledge that enables more effective and efficient farming decisions.
- » Contribute to the transformation of commercially-driven agriculture and build capacity in the targeted region.
- » Generate better aggregation and use of data in agriculture to ensure that farmers and community actors can make effective choices to enhance their productivity, on-the-ground and in market planning.

The Prize will be aligned to Feed the Future's efforts and programs to support vegetable and cereal production, agriculture supply chains, aggregation and marketing, and targeted production infrastructure.

Ic Feed the Future

Feed the Future, America's global hunger and food security initiative, aims to transform lives toward a world where people no longer face the agony and injustice of extreme poverty, undernutrition and hunger. To achieve this, Feed the Future agencies work hand-in-hand with partner countries to develop their agriculture sectors and break the vicious cycle of poverty and hunger.

In particular, Feed the Future aims to:

- » Increase agricultural productivity and generate opportunities for economic growth and trade in developing countries.
- » Boost the harvests and incomes of rural smallholder farmers, who are the key to unlocking agricultural growth and transforming economies.
- » Improve agricultural research and development and get existing, proven technologies to more people.
- » Increase resilience to prevent recurrent crises and help communities better withstand and bounce back from crises when they do happen.

USAID's Digital Development for Feed the Future team believes that with advances in satellite imagery, electronic data collection, sensing technologies, crowdsourcing, and the global movement to share open data, more information than ever can be harvested and made relevant for farmers. Increased access to other sources of data and the movement towards more effective use of new and newly available data

sources also presents some valuable opportunities to develop technological solutions which better meet societal need. Technologies to support data-informed agricultural decision-making already exist in some geographies.

Unfortunately, all too often, developers of these technologies fail to connect with smallholders, NGOs, agriculture extension professionals, and ministries of agriculture to ensure the end-user is able to successfully avail themselves of this data and utilize these technologies at scale. To that end, the Digital Development for Feed the Future team is issuing a prize to support local agricultural production through sharing knowledge that enables more effective and efficient farming decisions. This competition will incentivize the development and measurement of sustainable, demanded approaches that can regularly pull data from various sources and translate that data into understandable and actionable information for Nepali farmers or those that work with them.



This prize is focused on sourcing and sparking innovations for Nepali Farmers and those that work with them. But given the global nature of this problem, we anticipate some of these solutions could have relevance beyond Nepal.

Section 2

The Prize Competition



2a Prizes

Prize competitions are a tried and tested method for supporting innovation. They offer a reward to those who can first or most effectively meet a defined challenge. They act as an incentive for meeting a specific challenge, rather than being a reward for past achievements. Prizes are also a means of throwing open a challenge beyond the ‘usual suspects,’ thus facilitating the engagement and participation of anyone who can solve the challenge.

The Feed the Future initiative sees this open innovation approach as a critical tool in its work to improve agricultural productivity, expand markets and trade, and increase the economic resilience of vulnerable rural communities, in all its partner countries.

2b The Prize Statement

The data-driven farming prize is seeking tools and approaches that source, analyze and translate data into actionable timely and context-specific information for small holder farmers to improve value from agricultural productivity.

In particular, the data-driven solutions will be tested in Nepal, and should be able to meet one or more of the following outcomes:

- » Produce timely and context specific insight for improving the production of rice, other cereals and vegetables in Nepal.
- » Support more sustainable use of Nepal’s natural resources (i.e. increase biodiversity, use water more sustainably, improve use of land).
- » Enable the market by providing inputs, extension services, and connections which support farmers in a sustainable way in Nepal.
- » Improve the application of agricultural solutions in Nepal (i.e better use of fertilizer, generation of quality seeds).
- » Generate timely and actionable information to manage Nepal’s agricultural productivity risks due to weather emergency.

2c The Prize Fund

Feed the Future will be awarding \$300,000 in Prizes for Data-driven Solutions that Support Food Security in Nepal.

- » Two winners will receive awards of \$100,000 each for the most viable solutions.
- » Two additional awards of \$50,000 will be made for the solutions which demonstrate significant potential.
- » Prize Awards will be announced at an event in Nepal in September 2017.

2d Eligibility Criteria

The prize is designed to encourage a broad range of global Applicants, and would also like to encourage innovation in Nepal.

- » **Open to all** - We are open to solutions from individuals, groups, organizations and companies globally, and all sources and sectors, particularly local innovators from South Asia.
- » **Local applicability** - though the call is global and solvers can come from all over the world, the solutions will be tested and applied to Nepal.
- » **Willingness to share learning** - All entrants need to demonstrate a willingness to share their experiences and learning to help establish a body of knowledge that can bring about a sustained change in the use of data to improve agriculture productivity.

-
- » **Prototyping Skills** - Applicants need to ensure they have the capacity to develop a prototype of the solution over the challenge time frame. Some support will be provided to help achieve this, but Applicants must be able to develop and test prototypes during the course of the prize, if selected.
 - » **Intellectual Property** - Any intellectual property in the submission must belong to the Applicant. Applicants will retain the intellectual property rights to their entry to the Prize. Such Intellectual Property must be clearly marked as proprietary. It is the applicant's responsibility to ensure that they are not infringing on the Intellectual Property of others.
 - » **Incomplete Entries** - Entries will not be assessed if all required fields have not been completed. This applies to any stage of submission for the Prize and also relates to missing documentation that may have been requested.
 - » **USAID Responsibility Determination** - USAID will conduct a responsibility determination prior to award, to ensure that award to the organization meets applicable U.S. laws, including regulations administered by the Office of Foreign Assets Control (OFAC) of the U.S. Department of Treasury. For more information, see OFAC website: <http://www.ustras.gov/ofac>, including the list of Specially Designated Nationals.
 - » **Application in English** - Entries need to be submitted in English by the relevant deadline, and will be assessed against the judging criteria.

2e Judging Criteria



This section outlines the criteria by which applications will be assessed and judged throughout the challenge process.

There are 6 judging criteria and the information provided below aims to help Applicants understand what the judges will be looking for when making their decisions.

Criteria 1 Data-Driven

The submission should present a new, adapted or aggregated data-driven solution, able to add value to context specific agricultural productivity issues in Nepal.

We will be assessing:

- The extent to which data is incorporated into the product / service.
- How effectively the solution translates data into accessible and actionable insights for farmers.
- Solutions that demonstrate a new or adaptive ways of improving productivity or introducing a completely new approach.

Please Note:

- a. A number of relevant data sources are being made available and signposted on the Prize platform data-drivenfarming.challenges.org.
- b. This is not intended to be the only source of data available. You can utilize any data sources you have access to to help you achieve the required outcomes.
- c. Data should not be used or submitted that does not protect personally identifiable information.
- d. Please also see Page x for more information on data.



Criteria 2 Potential Impact

The Applicant should demonstrate a real understanding of the situation that their solution is helping to address. Impact will be measured according to the degree to which the solutions can provide actionable insights for on the ground farming decisions to be made.

We will be assessing:

- How clearly articulated the understanding of the specific need at farm level (e.g., area of productivity) that is being addressed.
- Whether there is a good understanding of the smallholder farmers including gender and cultural dynamics likely impact that the solution will have. For instance, by providing a logical reason, or set of reasons, for why it is likely to have impact, and why that would be an improvement on the current situation.
- The extent to which applicants have developed working prototype of the solution developed sufficiently by May 2017 to be able to gather feedback from smallholder farmers, extension services and/or other value chain actors on its utility and perceived impact for representative categories of intended adopters/users.
- The extent to which to a diverse range of smallholder farmers (men, women, ethnicities etc) and extension or advisory services perceive the applicant's solution (by experiencing a prototype) likely to have a positive impact on the ground farming decisions which support improved agricultural productivity.



Criteria 3 Usability

The solutions should demonstrate that they meet end-user needs and are sufficiently flexible to be used by smallholder farmers and community actors, with different languages, levels of education, and digital literacy and access to various forms of technology.

We will be assessing:

- Ease of use of the solution/information.
- Direct feedback from testing with diverse farmers and any other end users about whether they can utilize the data to make timely, action-oriented decisions on their farms.
- How accessible the solution is likely to be including by underserved populations (e.g. women/girls, people with disabilities, and other socially relevant groups such as low income, marginalized ethnicities, landless or land-poor households and lower caste groups) through the applicant's account of business planning and distribution models.



Criteria 4 Affordability

The solution should be accessible and affordable to a broad range of people. Applicants should consider who would buy this solution, obstacles that may inhibit acquisition, tactics to mitigate any barriers, and how much will it cost them to buy it and maintain its use.

We will be assessing

- Value for money to the farmer or other end users.
- Consideration for materials used to produce, maintain, and fix.
- Appreciation of the cost to market and comparison to cost of existing solutions.



Criteria 5 Growth potential

The solutions shall demonstrate financial and environmental sustainability and entrants should consider the commercial and growth potential of the solutions.

We will be assessing:

- How well the solution has been developed in relation to a particular market and how well that market is understood. For instance, an understanding of how it fits with solutions that are already out there.
- The extent to which teams can show the potential and/or specific opportunity for growth and the development of a sustainable business model that allows for ongoing product updates and maintenance will also be considered.
- How the solutions supports sustainable use of natural resources.



Criteria 6 Privacy & Security

Applicants will consider the context and needs for privacy of personally identifiable information when designing solutions and mitigate accordingly.

We will be assessing:

- Adherence to any data protection laws of Nepal and host country.
- Please Note: Visit <http://digitalprinciples.org/address.privacy-security/> to source further resources and information that will support better understanding of privacy and security considerations.

This prize will incentivize the development and measurement of sustainable tools that translate data into understandable and actionable information for Nepali farmers or those who support them. By converging data on indicators such as weather, soil and air quality, crop health and maturity - to name a few- new insights and information can be generated to help value chain actors make smarter and more timely decisions.

2f Assessment and Judging Process

A panel of Judges will assess solutions to inform decisions about the selection of finalists and winners. USAID has sole discretion over the ultimate winners of the Prize. The judges will be representatives of the partnership, including Feed the Future, USAID, Microsoft Innovation, CIMMYT, ICIMOD and GODAN, with particular knowledge and expertise across a range of areas from agriculture, data, contexts specific to Nepali farmers, innovation and international development.

There will be **2 key stages of assessment and judging** for this prize.

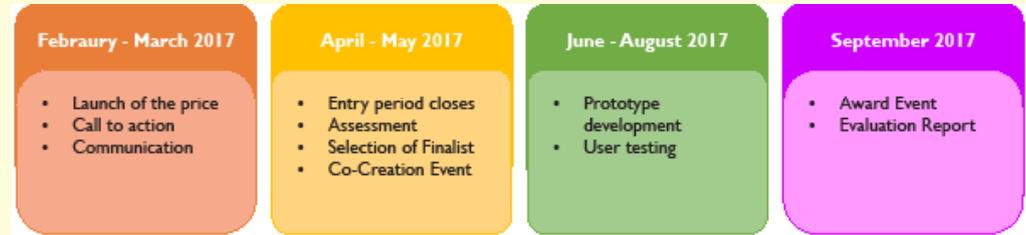
Entry Stage Assessment (April 2017)

- The entry form clearly outlines which questions relate to particular criteria for ease of reference. However, it is important to complete all sections of the entry form for the application to be considered, as the other parts are also important for evaluation purposes.
- Each complete and eligible entry form that is submitted will be assessed and scored by representatives of the partner organizations and implementation parties.
- Assessors will make a recommendation based on those scores which will be shared with the judges.
- The judging panel will convene to determine who should be going forward as the 10 Finalists to the Co-creation event in Nepal and make the final recommendation to USAID.

2. Final Assessment (August 2017)

- Finalists will be required to submit a development plan after developing and testing prototypes with the user group.
- Finalists will also be required to prepare a presentation of their solution for the judging panel.
- The judges will then come to a decision about whom to recommend to USAID to receive the two \$100,000 prizes as they have the most viable solution that meets the judging criteria. The judges will also make a recommendation to USAID about who is to receive the two \$50,000 as they have demonstrated the most significant potential.
- The Winners will be announced at the Award Event to be held in Nepal in September 2017.

2g Competition Structure and timeline



Launch

9 February 2017

- » The Data Driven Farming Prize will be open for entries on Thursday 9th February.
- » The Prize will be launched in Nepal with a panel discussion and technology showcase event.
- » Entry forms can be completed and submitted online at datadrivenfarming.challenges.org.

Call for Applications - Entry Period

9 February - 6 April 2017

- » The prize call will be open for eight weeks.
- » During this time we will host a webinar featuring a Questions and Answers session where we will be answering questions from prospective applicants and publicly sharing the answers.
- » Prospective applicants can also send queries via email to ddfarming@challenges.org.uk.

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- » We will publicize any other Questions and Answers opportunities on the platform.
 - » A Frequently Asked Questions section is also outlined in Annex B of this handbook.

Stage I - Application Deadline

6 April 2017: 23:59 EST

- » Submissions received after the deadline date and time listed above may not be considered
- » All eligible submissions will be assessed and judged to reach a decision on the 10 Finalists.
- » See Assessment and Judging criteria and process on Page 22.

Finalists' Co-creation Event

End of May - Dates TBC

- » 10 Finalists will be selected and invited to participate to the Co-creation event which will take place in Nepal towards the end of May.
- » This event is going to be a two or three day event.
- » An allowance will be provided to cover expenses for travel and subsistence and the administrative arrangements will be conveyed beforehand.
- » We will notify Finalists at least three weeks before the event to provide time to make the appropriate arrangements.
- » Please make note of the timeframe as it is a requirement that selected Finalists attend.
- » Two representatives will be invited to attend for each selected idea.
In addition, each Finalist will receive \$2,500 to support the develop of their prototype.



Please note that it is not intended that IP be shared

Co-creation Event (2/3 days in May)

The Co-creation event is an occasion for the Finalists to meet each other, be guided by a range of experts through practical workshop activities on how to most effectively develop their solutions, and develop a better understanding of the market. Most importantly, however, it will offer the possibility to co-create the next iteration of the solutions directly with the target audience of Nepali Farmers and/or extension service providers. This provides a valuable opportunity to test and refine the product based on the views and interactions of the people that are intended to use it.

Prototype

In order to make the most of the Co-creation event, it is important that Finalists bring a Prototype of their solution. The prototype does not have to be in perfect working order, but it should be developed enough to demonstrate how it might work. Finalists can be creative with how they design and develop their prototype as long as it is sufficiently demonstrable for Nepali farmers/extension services to be provide feedback.

Capacity Development

It is important to us that the Finalists are supported to develop their prototypes during the Prize timeline. We will therefore be working with a range of partners who will provide capacity development support during the Co-creation event and during the following weeks while Finalists are further developing their plans.

Microsoft Innovation Center, Nepal will be running workshops at the Co-creation event focused on entrepreneurship, business development and prototyping. They will also provide ongoing mentoring support for eight weeks after the Co-creation event to support Finalists to develop their plans and understand the market better.

CIMMYT in addition to providing a range of locally specific data for the prize will also be involved in workshops activity during the Co-creation event to support Finalists to understand how to maximize their use of data to produce context specific, actionable tools and approaches that respond to Nepali farmers needs. They will also be a key party involved in testing the viability of the Finalists solutions with the target audience, which will help judges make the final decisions.

ICIMOD will have a presence at the Co-creation event and will be providing Finalists with guidance on what is involved in making good agricultural decisions more localized and timely.

GODAN is making available a number of data sets. GODAN have previously run data competitions to improve agricultural productivity, and will be sharing guidance and learnings in this field with the Finalists.

Development Plans and Testing

June - August 2017

- » After the Co-creation event Finalists will have eight weeks to further develop prototypes.
- » During this period, user testing will need to take place. This is likely to involve CIMMYT testing the Finalist's prototypes with Nepali farmers and extension services to understand how viable the product is and how much of a difference they think it could make to their agricultural productivity.
- » Finalists will also be required to complete a development plan as part of their final submission. This will be similar to a business plan.
- » There will be ongoing mentoring support during this time.

Development Plans

The development plans have a similar structure to business plans. They are intended to help Finalists develop a more sustainable model for the utilization of their tool/approach. It also means that Finalists are in a better position, whether they win an award or not, to have a strong case to approach other funders and investors, post prize participation.

Testing

More specific information will be provided on testing once the Finalists have been selected. However, it is important to know that the two key components are validating the data and ascertaining how useful and impactful farmers feel the solution will have on their agricultural productivity.



Full details of the testing protocols will be made available to the finalists at the Co-creation event.

CIMMYT will be key partners in testing the validity of the Finalists solutions and they have access to the following to support testing:

- » **Data** - CIMMYT has several key integrated agronomic and socio-economic datasets that competitors can use to validate and ground-truth potential analytical solutions.
- » **Farmer networks** - CIMMYT operates many farmer networks throughout various agroecologies of Nepal. CIMMYT can facilitate access to these farmer networks for formal and informal evaluation and testing of potential prize solutions.
- » **Field research sites** - CIMMYT operates several agronomic research activities located in rural Nepal. These include a seed variety evaluation and screening research center, on-farm agro-input evaluation trials, and farmer-managed participatory evaluation trials. CIMMYT can facilitate access to these research sites and data for testing and evaluation of potential prize solutions.
- » **Agro-input networks** - CIMMYT is working extensively with various components of the agro-input network. These include:
 - Farm machinery companies, financial service providers, agro-input (seed, fertilizer, and agro-chemicals), distribution cooperatives, seed companies, fertilizer companies, government agricultural extension services.

Deadline for Final Submissions

The deadline to submit the final development plan is 4th August 2017
See Assessment and Judging criteria and process on Page 22.

Final Award Event

End of August/ September 2017 (DATE TBC)

- » A final showcase awards event will be held in Nepal between the end of August and middle of September 2017.
- » Two representatives will be invited for each Finalist solution.
- » Finalists will have the opportunity to present their prototype and plans to the audience.
- » The Awards will be announced at an evening reception.

Final presentations

The final presentation provides an opportunity for Finalists to tell the judges directly about their solution. This will help bring the idea to life. Presentation details will be confirmed but is likely to consist of a 10-15 minute presentation, followed by a questions and answers session from the judges.

2i Tips to complete a competitive application



Be passionate about wanting to use data to provide Nepali farmers with actionable solutions that help improve their agricultural productivity.

- » Understand the issue the Prize is designed to address.
- » Read carefully through the Prize Terms and Conditions.
- » Make sure you meet all the Eligibility criteria and you understand all the Judging Criteria.
- » Pay careful attention to the requirements and timeline of the Prize; this handbook provides you with all the relevant information.
- » Visit the application platform datadrivenfarming.challenges.org to understand what you will need to complete. Also see Annex C for entry form template.
- » If you haven't already, come up with a great idea that you can develop.
- » Double check that your idea properly responds to the needs of Nepali farmers.
- » Utilize the data sets that are available/listed here, or surprise us with other data sets that you think will create a great solution.
- » Read the Frequently Asked Questions or ask additional questions if you are unsure about any aspect of the Prize (ddfarmingprize@nesta.org.uk).
- » Complete the online application form in full by the deadline.
- » Get started on developing your idea and make sure you are able to have a prototype ready by May if selected as a Finalist.
- » And remember, even if you don't get selected as a Finalist for the Data Driven Farming Prize, the fact that you have been inspired to come up with an idea is a great start. If you believe in your idea and demonstrate that, someone will believe in you.

A photograph showing the lower bodies and hands of several farmers in a muddy rice paddy field. They are wearing colorful, patterned saris and dark, muddy boots. They are holding small bundles of young rice seedlings, ready to be planted in the water. The scene is outdoors, with natural light and a focus on the agricultural activity.

Section 3

Farmer Needs

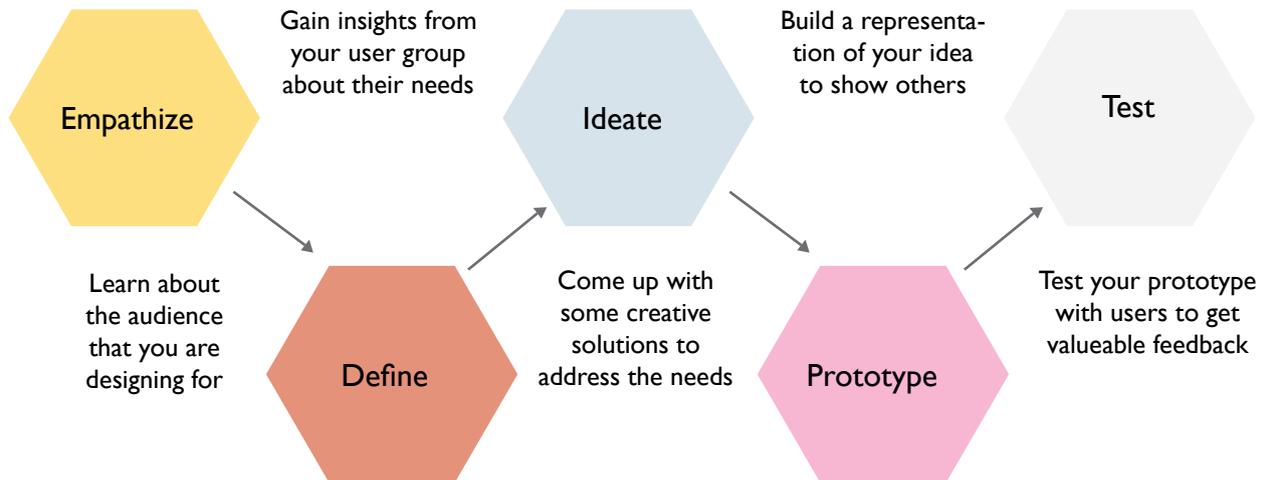
It is easy to fail when designing an interactive experience. Designers fail when they do not know the audience, integrate the threads of content and context, welcome the public properly, or make clear what the experience is and what the audience's role in it will be.

Edwin Schlossberg

3a Human Centered Design

It is important to remember that the solutions that we are looking for in this challenge should provide actionable insights that are likely to make a real difference to the lives of Nepali farmers. This may be by way of a solution that is put directly in the hands of the farmer or through the extension services that provide advice and information to them.

The following diagram presents a useful way to think about the development of your solution which keeps in mind the end user.



3b Extension Services

Extension service agents provide advice and information to assist farmers in making decisions and generally enable them to take action. This can be information about prices and markets, for example, or about the availability of credit and inputs. Technical advice usually applies more directly to production activities of the family farm and to the action needed to improve or sustain this production. Much of this technical advice will be based upon the findings of agricultural research. In many instances, however, farmers are also sources of valuable advice and information for other farmers, and agents should always try to establish a farmer-to-farmer link.

Most of Nepal's agriculture is undertaken by women, but research tailored to their needs is lacking. "We need new technologies that can reduce the drudgery for them," said Devendra Gauchan, agricultural economist and chief of the socioeconomic and agri-research policy division at the Nepal Agricultural Research Council (Narc).



3c Actionable Insights which are timely and context specific

The needs in Nepal are expansive and there is a proliferation of different data out in the world, so finding the right sets of data to use can be challenging. In that regard there are a few things that Applicants should take into consideration.

- » Ensure that the data sets being used are up to date.
- » If the data is historical or extrapolated, then be clear about how it relates to the present.
- » Make sure the information being provided is relevant to Nepal agriculture, geography, culture etc.



- » Consider how the solutions will help Nepali Farmers understand how to improve productivity.
- » Ensure that the solution provides information that can inspire direct action.
- » Be mindful of the fact that there are a number of other information sources that farmers have access to so how is this solution immediately relevant to their lives, simple to access and easy to understand.

Remember as outlined previously all too often, developers of technologies fail to connect with smallholders, NGOs, agriculture extension professionals, and ministries of agriculture to ensure the end-user is able to successfully avail themselves of this data and utilize these technologies at scale. This is a good opportunity to really consider the needs of the farmer and how the use of data can be meaningful to their everyday lives. Hence, the prize requiring solutions to provide actionable insights that relate very specifically to the needs that Nepali farmers have and can be used by farmers now to make a difference to their lives and livelihoods.

3d Example Scenarios of Farmers Needs



A. Automating crop health diagnostics at scale

Suppositions

Supposition #1: Agro-environmental information is collected on largely an ad hoc basis in Nepal, and these data tend to have insufficient temporal and spatial resolution to drive decision-making. Localized information on crop health (e.g. pests, diseases, drought, and nutrient deficiencies) are largely unavailable and cannot be generalized at the landscape or sub-regional scale from scattered point data.

Supposition #2: Crop health problems typically manifest in distinctive visual patterns.

Supposition #3: The widespread and growing penetration of smartphones with digitally-enabled optical cameras among rural farming communities in Nepal can serve as distributed and geo-located sources of imagery to drive crop health diagnostics.

Supposition #4: Crowd-sourcing platforms coupled with modern machine learning approaches can provide fast, accurate, and cost-effective tools for crop health diagnostics.

<p>Potential ways to address the suppositions</p>	<p>Build a simple, reliable, and cost-effective platform for crop health assessment that draws on plant images provided by smart phone-enabled smallholder farmers, input retailers, state extension system, and others engaged at the field level in supporting agricultural development. For future applications in decision support, this system must include prototype design elements that incorporate bi-directional communication mechanisms between end-users and technical experts whereby end-users generate imagery and are provided with localized management recommendations (fertilizer, variety, chemical inputs, crop management techniques etc.).</p> <p>In addition, this system must accommodate users of variable literacy levels and include provisions to provide management information through SMS for users without smartphones.</p>
<p>Useful data sets</p>	<p>CIMMYT is integrated with networks of farmer co-operatives that will be leveraged for testing and deployment across several agro-ecologies. Georeferenced validation data (soil and plant analysis, crop cut yield measurements) from CIMMYT programs within the region will be provided as benchmarks for accuracy estimates.</p>
<p>Additional Impacts</p>	<p>Provision of farm-specific crop health diagnostics may generate greater demand for localized crop management advice, which will spur the creation of new advisory services and aligned business opportunities in the public and private sector.</p>



B. Sourcing weather data in near-real time

Suppositions

Supposition #1: The Nepalese government collects localized weather data through a fairly dense network of observers, but processing delays preclude these data from being useful for adaptive management.

Supposition #2: Robust decision frameworks that permit strategic and adaptive management adjustments require well-curated historical and within-season weather data to optimize crop management recommendations (e.g. planting timing, fertilizer timing, etc.) across the diversity of landscapes and cropping systems in Nepal.

Supposition #3: The crowd-sourcing of basic weather data (e.g. daily rainfall, max/min temperatures) through smartphones is a viable avenue for collecting these data at scale in near real-time and making them available to support decision-making accordingly.

Potential ways to address the suppositions	Create a smartphone-based application that can facilitate the crowd-sourcing of localized weather data (precipitation, min/max temperature). The solutions must include novel ways to incentivize data collection and may integrate low-cost devices for environmental measurements (digital or analog).
Useful data sets	Leveraging infrastructural and data assets: CIMMYT has access to extensive historical weather data sets. This data may be used as training or validation data.
Additional Impacts	Unavailability of site-specific weather data is a persistent challenge for adaptive management of agricultural systems in South Asia. Alleviation of this deficit may provide unintended positive changes to other industries and government regulatory authorities beyond agriculture (e.g. public health, wildlife management etc.)



C. Yield forecasting and measurement

Suppositions

Supposition #1: Lack of spatially-explicit crop yield estimates at scale are a principle limitation to evaluating opportunities for agricultural intensification, improved production efficiencies, and for stimulating investment in agricultural value-chains by the private and public sectors.

Supposition #2: Crop-cut yield data has been logistically difficult and expensive to acquire. While self-reported yield estimates are inexpensive, data quality can be unreliable.

Supposition #3: Yield forecasting systems based on in-season environmental characterizations and crop condition assessments are insufficiently spatially-resolved and, as a consequence, often inaccurate.

Supposition #4: High penetration of mobile phones into rural communities in Nepal provides opportunities for smart-phone-based yield forecasting and assessment. In many areas an estimated 90% of rural households possess mobile phones, of these 30% are estimated to be smart-phone enabled. Image-based or innovative survey platforms may be an efficient way to increase the availability of yield data at scale.

<p>Potential ways to address the suppositions</p>	<p>Create a digital platform that integrates historic geospatially explicit yield data with in-season environmental (weather, soils, pest/disease) data and models into a yield-forecasting platform. This system should include aggregation and validation of end-of-season yield measurements. Data sources can include archived traditional data sets, but should also explore the use of high-resolution and low-cost remote sensing data (e.g. Sentinel II). Traditional data models (e.g. DSSAT) and algorithms (e.g. NDVI) can be included, but should also explore newer ones (e.g. machine learning).</p>
<p>Useful data sets</p>	<p>CIMMYT will provide access to existing networks of thousands of farmers across multiple geographies and cropping systems in Nepal. Every year CIMMYT measures crop-cut yield estimates across these geographies. This dataset will be contributed as a validation dataset for calibration and error estimation. CIMMYT also has archived weather and other environmental (e.g soil) that can be leveraged.</p>
<p>Additional Impacts</p>	<p>Creating spatially-explicit yield forecasts will provide the opportunity to link output market aggregators with farming communities. Creating this linkage will eliminate some of the data gaps and communication inefficiencies along the commercial value chain. In addition, the provision of this information across wide geographies will provide the Government of Nepal with up-to-date aggregate crop production data, which may be used to better articulate policies and associated support programs.</p>

D. Aggregator linkages

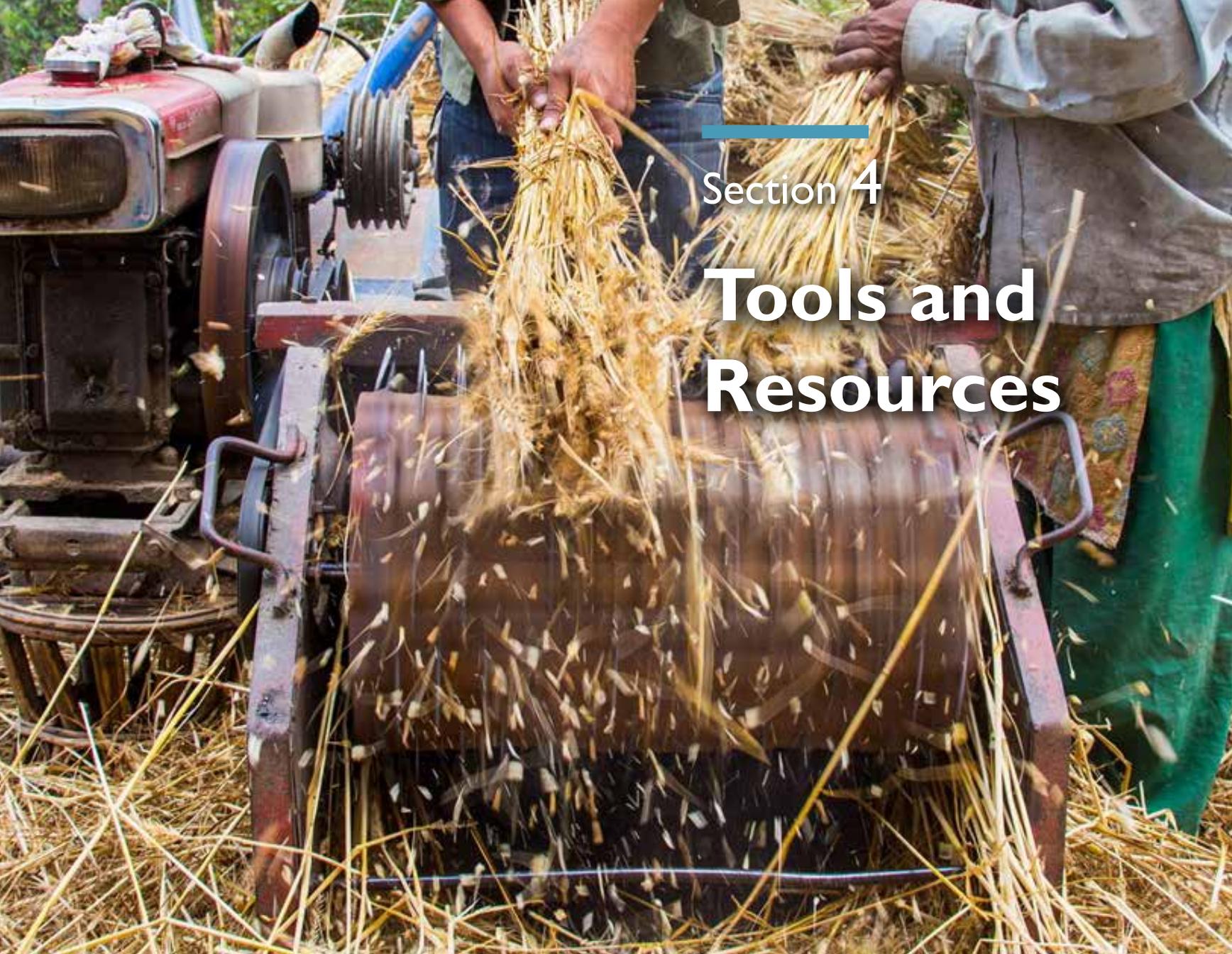
Suppositions

Supposition #1: The agronomic geography of Nepal is highly fragmented. Physical fragmentation occurs between the distinctive Terai plain, mid-hill, and high mountain physiographies that are incompletely linked with existing road networks. Logistic fragmentation occurs as function of limited government financing, a lack of emphasis on public-private partnerships, and the rather nascent stage of commercialization of the agricultural sector. Loose connectivity between farmers, input suppliers, and output markets is responsible for stalling innovation and income generation in the rural sector.

Supposition #2: For machinery-based service providers who supply technologies that have a wide working domain (e.g. combine harvesters, laser land levellers), service provision coordination on a geographic basis will increase profitability while reducing transactions costs and making access more affordable to smallholders.

Supposition #3: Efficient product collection is required to establish commercial value chains in areas where output markets are not well-established. Assured collection will incentivize intensification by reducing risks posed by uncertain markets.

Potential ways to address the suppositions	Create a digital communication platform that aggregates demand for agricultural machinery services (input market) and a second platform for aggregating information on staple grains produced for commercial purposes (output markets) so that staples can be efficiently collected by market intermediaries (e.g. traders).
Useful data sets and connections	CIMMYT will provide access to existing networks of thousands of farmers across multiple geographies and cropping systems in Nepal. CIMMYT also will provide connections to the machinery service provider and output market aggregator community throughout Nepal.
Additional Impacts	Greater linkages between components of the agricultural value chain will improve coordination between supply and demand, thereby increasing market efficiencies and encouraging expansion.



Section 4

Tools and Resources

4a. Data

The Prize does not want to dictate what type of data should be used to generate the most impactful tools and approaches.

Yet to support Innovators thinking and starting point we have gathered a range of data which is listed on the platform under <http://datadrivenfarming.challenges.org/data-sets-2/>

Data Categories

The data provided has been categorized under four key areas

- » **Global Agriculture Data sets** - links to various set of data from various countries and/or regions focused on a the agricultural sectors and productivity.
- » **Nepalese Data sets** - links to various set of Nepalese data mainly focused on a the agricultural sectors and productivity.
- » **Open Data Portals** - various data links to various portals that presents set of data regarding different subjects and from various countries and/or regions.
- » **Food & Nutrition Open Data Portals** - links to various set of global data focused on the nutrition side of agriculture products.

Geonode.org will also aggregate and layer relevant Nepali datasets.

Data Accessibility

Each data link takes Innovators to the web platform where the data is presented in different ways, including graphics, spreadsheet, reports and others. Some of these require registration (such as Google Earth Engine), while others provide completely open access.

Other Data Sources

The list of data sources we have presented in the platform is not exhaustive! Therefore we do not want to limit the capacity or creativity of the Innovator to use other data sources to achieve goals.

To give a sense of how different types of data can be useful for different purposes, see the following table in which we sum up how data has been used to develop various innovations in agriculture.

TYPE OF DATA	What they have been used for
Geological, satellite, soil, weather and market data.	Early, accurate detection and prediction of problems, irrigation systems.
Weather, markets; scientific research and longitudinal studies, actionable evidence from case studies related to Nepal.	Planning what to grow, what treatment to apply, when to plant, treat or harvest, business planning.

Weather, crop yield, pest outbreak and production history data.	Risk management and damage control.
Regional yield variation and climate prediction data.	Planning subsidies and insurance plans.
Product and supply-chain data, market data.	Generate informed consumers; business planning.
Targeted data on new and emerging pests.	Generate fast responses to the challenges, and has market value.

Aggregating Data

After gathering the data and before going into the analysis of data, the first challenge will be to aggregate all the data in a consistent and coherent format.

Data analysis and Interface

There are two elements to the way that innovators will need to interact with the data to achieve the types of outcomes that this Prize is pursuing. The way that the data is analyzed to extract the right type of information and make the right type of connections with other data sets to extrapolate information. And the way that information is presented as an interface for the desired audience to utilize it in the way that it was intended. The interface defines how human beings interact with the solution.

Some tips to help with analysis

Know your approach	Understand the questions you are trying to answer and experiment with the data sets that might help you answer those questions.
Know how your data was generated	Make sure your data is credible and complete for your requirements.
Profile your data	Become familiar with the data sets you want to work with to understand why and how you want to use them to best effect.
Look at your data from multiple dimensions	The way data is presented can be misleading or skew perspective, so it is important to look at it from a variety of dimensions to understand what it really is telling you.
Challenge your thinking	The data may be implying one thing while your approach may want it to reflect something different. Use the data to challenge your own thinking.
Clarify your assumptions	Clarifying your assumptions doesn't just come from double and triple checking the data,; it's also helpful to test your assumptions with real people.
Check your work	Particularly when there are deadlines and other pressures, it is even more important to carve out some time to check your work.
Communicate	Data analysis is often about solving a problem that impacts stakeholders. So don't forget to work with them to answer the questions.

4b Microsoft BizSpark Cloud Services



Microsoft Innovation Centre is kindly making available to Finalists of the Data Driven Farming Prize access to their BizSpark global program.

Microsoft BizSpark is a global program that helps startups succeed by giving them free access to Microsoft Azure cloud services, software, and support. BizSpark startups receive five Visual Studio Enterprise with MSDN subscriptions, each with a \$150 monthly Azure credit. This totals \$750/month across all five developers to spend on Azure services. These benefits are available for one year.

BizSpark is committed to helping technology startups realize their goals on their own terms and in the shortest amount of time. Through BizSpark, Microsoft's goals are to:

- Help young and innovative software companies gain valuable experience and expertise in Microsoft technologies, with no upfront costs.

- Help startups establish connections with local and global startup ecosystems - VCs, angels, incubators, accelerators, entrepreneur associations, etc.

- Stimulate vibrant local software ecosystems and promote innovation and inter-operability.

For more information see <https://bizspark.microsoft.com>



Section 5

Annexes

Annex A - Terms and Conditions of participation

Terms and Conditions of participation

The Data Driven Farming Prize is a Feed the Future prize being implemented by Nesta and DAI working with a number of other partners. Please read these terms and conditions carefully before submitting an entry. By submitting an entry, you accept these terms and conditions and agree to comply with them.

I. PARTICIPATING IN THE PRIZE

- 1.1 Entries received in English by the relevant deadline will be assessed against the entry criteria for the Prize set out in the promotional materials, including any age limit. Late or incomplete entries may not be accepted. We are not responsible for entries which are lost, damaged or late due to computer, network or telecommunications failure.
- 1.2 Employees of USAID, other individuals working on the project, and their immediate families, are not eligible to enter. Unless otherwise stated, you may make up to three entries to the Prize Call and must bear all your costs of entering and participating in the Prize, including travel costs, unless otherwise stated in the supported materials.
- 1.3 Eligible entries will be assessed against the publicized judging criteria. Entries may be shortlisted and asked to complete further activities as described in the promotional materials, and performance will then be assessed against the relevant judging criteria. Participation in Prizes, tests and other events are a condition of participation in the Prize.

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- 1.4 We will use the contact details provided to contact you about the Prize. If you do not respond within 7 days, or if you subsequently withdraw or are withdrawn from the Prize for any reason, we may select another entry in your place, but are not obliged to do so.
 - 1.5 The judges' decision about eligibility, shortlisting and selection, including the methodology used to assess entries, validity of any claims and data submitted, is final and correspondence will not be entered into.
 - 1.6 The prize should be used in ways that continue to be of public benefit and towards achieving the outcomes set out by the Prize. We reserve the right to impose additional conditions if appropriate in our reasonable opinion, including if the Prize has not resulted in sufficient public benefit or to comply with other legal requirements. The prize will be paid in US dollars and the winner is responsible for payment of tax and other charges in relation to the award of the prize.
 - 1.7 We reserve the right at our sole discretion to refuse to accept any entry; to suspend or withdraw the Prize at any time; to vary the form and substance of the Prize including dates for deadlines, challenges and events; to reduce or increase the number of entries selected for any phase, including the final prize; not to award the prize; and/or to reject or withdraw a place on the Prize competition if in our reasonable opinion, you are in breach of these terms and conditions, fail to participate fully or do anything to damage the reputation of USAID or our partners.
 - 1.8 We reserve the right to vary these terms and conditions at any time. Variations will take effect from the date they are posted on our website, datadrivenfarming.challenges.org, so please check regularly to see the current version.

2. YOUR PROMISES TO US

2.1 By submitting an entry to the Prize, you confirm that:

- You satisfy the relevant eligibility criteria and all information submitted by you is true, accurate and complete. We reserve the right to ask for additional evidence of claims made by you, to validate claims by any means we see fit and/or to reject claims at our sole discretion.
- Your entry is your own original idea, is not copied from anyone else and to the best of your knowledge, does not infringe any intellectual property or other third party rights. We may withdraw your entry if we receive notice that it infringes any third party rights.
- You have, or will obtain, all consents and permissions necessary to submit your entry, participate in the Prize and comply with these terms and conditions.
- You will act lawfully, ethically and in good faith and comply with the rules of the Prize and any relevant laws, regulations, guidelines and codes of practice. You will comply with our reasonable instructions while participating in the Prize, including in relation to health & safety and security.
- Your organization and entry entry adheres to existing protocols for environmental protection and sustainability.
- Your organization and solution does not cause direct or indirect harm to marginalized groups including, but not limited to, women/girls, low income, ethnic minorities, and lower-caste groups.
- Your organization identifies and mitigates potential unintended consequences that may cause direct or indirect harm to marginalized groups.

2.2 We reserve the right to remove you from the Prize competition if you do not comply with these rules, if you cheat or behave in a way which is disruptive, inappropriate or potentially dangerous.

2.3 If you are entering as part of a group or team, the person completing the entry form is responsible for compliance with these terms & conditions by other team members.

3. INFORMATION AND PUBLICITY

- 3.1 You will retain your intellectual property rights in your entry to the Prize.
- 3.2 By submitting an entry to the Prize, you give us permission to use your entry, personal details and any other information provided during the Prize to administer and judge the Prize. We may share this information with judges, assessors, our partners, and anyone helping us to run the Prize, subject to appropriate obligations of confidentiality and data protection. We may send you information about other Nesta prizes, events and activities unless you tell us that you don't want to receive this.
- 3.3 We won't publish full details of your entry. However, by submitting an entry, you give us permission to use and publish your name, a summary of your entry and photographs/recordings of your participation in the Prize, which may include testing and prototyping of your entry, in any media and online. If you have any concerns about publication of information about your entry, please contact us before submitting an entry.
- 3.4 We and our partners may carry out publicity and promotion for the Prize and publish our research, case studies and evaluation in relation to the Prize and you agree to participate in this research, evaluation and publicity. Any public statements which you make in relation to the Prize must acknowledge Nesta and our partners and be approved by us in advance.

4. LIMITATION OF LIABILITY

- 4.1 We are not liable for any direct or indirect loss or liability, costs, claims, taxes, charges or expenses resulting from your participation in the Prize or your reliance on statements made or advice given by us, our partners or contractors.
- 4.2 Nothing in these terms and conditions excludes or limits our liability for death or personal injury caused by negligence or fraudulent misrepresentation made by us.

ANNEX B - FREQUENTLY ASKED QUESTIONS

1. Why is Feed the Future and partners, running the Data-Driven Farming Prize?

The Digital Development for Feed the Future team at USAID believes in helping farmers extract maximum value from local agricultural production by increasing their access to the data and information they need to make more effective farming decisions. Prizes use open competition to incentivize people to address a well-defined problem. Unlike challenges, prize competitions are designed to reward the achievement of specific outcomes and pay for those results. In Nepal, while there are many early apps for on-farm management, adoption has lagged and the right model for taking them to scale has not yet been identified.

2. What kind of tools and approaches are you looking for?

A promising application of available data that enables farmers to extract maximum value from their production. This prize will incentivize the development and measurement of sustainable tools that translate data into understandable and actionable information for farmers or those who support them. By converging data on indicators such as weather, soil and air quality, crop health and maturity - to name a few- new insights and information can be generated to help value chain actors make smarter and more timely decisions.

3. What do you mean by Data-Driven?

Solutions need to be based on hard evidence and data to generate timely and context specific information. Research demonstrates that increasingly available digital technologies including sensors, geospatial imagery, mobile financial services, and data analytics can be leveraged to make agriculture more precise, productive, resilient, and profitable. However, too often that data and analysis remains in research intuitions and on computer servers rather than reaching farmers or those who work with them. This prize requires solutions to use available data sources and make recommendations informed by good agricultural practice that will give farmers suggested interventions that can improve productivity.



4. Who can enter the prize?

The prize is open to individuals, groups and organisations with no regional restrictions. We encourage ideas from local people, including informal groups and networks, community groups, businesses and existing service providers. You can find out more by reading the eligibility criteria

<http://datadrivenfarming.challenges.org/eligibility-criteria/>

5. Can I apply if I am outside Nepal?

Yes, the prize is open to participants from all over the world, yet the solutions need to be applicable and responsive to Nepalese farmers needs, as outlined in the challenge statement <http://datadrivenfarming.challenges.org/>

6. Can I submit more than one idea?

Yes, you can submit up to three ideas and be named as a partner on more than one entry. Each idea must be submitted separately and needs to be different from the other ideas you have submitted.

7. I have entered my idea into another competition; can I submit the same idea to this competition?

Yes, you can enter your idea even if you have submitted it to another competition. Please make sure you provide relevant and specific answers to the entry questions for this competition. The other competition may have rules about you entering your idea in more than one competition. It is your responsibility to check this before you enter this competition.

8. I have already developed my idea, can I use that as an entry for this Prize?

As we are looking for innovations, you will need to explain how your idea differs from, builds on what is already out there, or has yet to be applied in Nepal. It's important for us to understand that it is a new idea or a new way of doing things.

9. Who owns the intellectual property of the submitted ideas?

You will retain your intellectual property rights in your entry to the Prize in accordance with the Prize Terms and Conditions section 3 (3.1; 3.2; 3.3; 3.4).

10. Can I remove my entry once I have submitted it?

Yes, you can send an e-mail to ddfarmingprize@nesta.org.uk and request for your entry to be removed.

11. Can I get some advice on how to best enter the competition?

If you have inquiries about how to enter the competition please e-mail ddfarmingprize@nesta.org.uk and somebody from the Challenge Prize Centre Team will contact you within three working days.

12. What do I do after I've submitted an idea?

You do not need to do anything after you submit your idea. The Challenge Prize Team will be in touch and if you're selected as one of up to 10 finalists, you will be invited to participate in the Co-creation event and receive additional information.

13. What type of data can I use to develop my idea?

You can use whichever data you need and have access to, as long as they are credible and appropriate to help you solve the prize statement issue. In particular, make sure the data can pro-

vide timely and context specific insights to the agricultural sector in Nepal. The prize platform and the innovators handbook both offer you some hints and tips in the use of data, but there is no limitation for you to use what you think will be more appropriate.

14. [Would a solution be considered if it doesn't meet Nepali context specific needs?](#)

Not for this prize competition. We are specifically sourcing for solutions that can respond to Nepalese farmers' needs. The solution may meet other needs but our primary focus is Nepal.

15. [How can I know more what farmer needs in Nepal are?](#)

You can find information on Nepali farmers needs on the innovators handbooks, to begin with. Much more information can be found on the internet. Some useful links include: Feed the future Nepalese country profile, or the FAO Nepal Country programme framework 2013-2020. If selected as a finalists, you will then have a chance to test your assumptions with Nepalese farmers during the Co-creation event and the testing period.

16. [Who will be using the tools and approach I can develop?](#)

You can decide if you are targeting Nepalese smallholders farmers or agricultural extension services or both. Yet, remember that "usability" is one of the judging criteria and what we will consider is the level to which your tool can be accessed and used by people with different background, capacities and educational levels.

17. [What is a prototype?](#)

A prototype is a demonstrable example of your solution which is sufficiently developed to undertake a testing period with end users.

18. When do I need to have a prototype of the solutions ready for testing?

You will need to have a prototype ready by the Co-creation event which will be held during the second half of May 2017 in Nepal. Only finalist will be invited to the Co-creation event and therefore only finalists will need to have a prototype ready by May. You will know if you were selected as a finalist by the end of April 2017. In addition to this, be aware that a prototype will also be needed during June and July for the testing phase with end users.

19. What is the Co-creation event?

The Co-creation Event is a two/three day workshop which will offer the finalists the possibility to co-create the next iteration of the solutions directly with the target audience of Nepali Farmers and/or extension service providers. This provides a great opportunity to test and refine the product based on the views and interactions of the people that are intended to use it.

20. Will I have to pay to participate to the Co-creation event?

The challenge prize team will offer the travel, accommodation and subsistence costs for up to two Finalist representatives. If finalists are participating as a team and want to bring more than two representatives to the event, travel and accommodations costs of any additional members will be the team's own responsibility to cover.

21. If I am selected as a finalist will the Co-creation event be mandatory?

Attending the Co-creation event is a requirement of participation. The Co-creation event will provide you with the relevant information, skills and contacts to help deliver a strong development plan and understand the requirements for the next stage of the Prize. If there are extenuating circumstances which prohibit attendance, we will of course discuss this further and reserve the right to make exceptions.

22. Who will be receiving the \$2500 of prototyping development pot?

Every finalist or finalist team, will receive each a \$2500 prototyping development pot which is meant to support the testing phase of your prototype. This is on addition of the travel and accommodation costs the prize team will cover to invite finalist to the Co-creation event (see question 20)

23. What happens to the ideas that don't make it to the finalist stage of the Prize?

All entries will be listed at datadrivenfarming.challenges.org. This information will be drawn from sections of the entry form. These sections will be clearly marked on the form as public. We will also be looking at ways of signposting entrants to more funding opportunities and other types of support.

24. What if my idea doesn't qualify?

If your idea doesn't qualify for this Prize, don't worry. There will be a series of other initiatives in future to which you can apply. In the meantime you can sign up to receive emails from us about this and future prizes.

25. What can I do with the prize if I win?

We hope the prize will be used to further develop the solution to get into a position in the market to continue to have an impact on the issue we are addressing. You may however, choose to utilize your winnings how you see fit.

ANNEX C - ENTRY FORM TEMPLATE

Stage I Entry Form

Entries need to be submitted online, however this document provides an overview of what we are asking in the first stage entry form to help you prepare your answers. The online form can be found here: datadrivenfarming.challenges.org

This is the Stage One entry form for the Data Driven Farming Prize which will be used to assess your solution against the published judging criteria.

Before you submit an entry, please ensure that you meet all the Eligibility Criteria and that you have carefully read the question and guidance. You should also read the Frequently Asked Questions (FAQs) our the Terms and Conditions.

During Stage One, we want you to articulate your creativity and thoroughly describe your innovation. The entry form is designed to provide us with an overview of your idea.

Please respond directly to the questions and within the word count provided. Use concrete examples and/or evidence to back up your statements, wherever possible. We may contact you to clarify or find out more about your idea, so please include a phone number with your entry.

More information about how the entry forms will be assessed can be found in the Innovator's Handbook (p. 20). If you have any further questions or queries relating to the Data Driven Farming Prize that have not been answered in the FAQs and Terms and Conditions, please email ddfarmingprize@challenges.org.

The deadline for applications is the 6th of April, at 23.59 ET.

There are 3 sections in the entry form

1. Your Details
2. Your Innovative Solution
3. Program evaluation questions
4. Declaration

(*) indicates required fields

Section I Your Details

Ia. Contact Detail

Full name *	
Job Title (if applicable)*	
Email address *	
Address line 1 *	
Address line 2	
City *	
Postcode/Zipcode*	
Phone number*	
Country*	

Ib. Are applying as an Individual/group/organization? *

- Individual Group Organization

Ic. Name of organization (if applicable)

Id. Type of organization (if applicable)

e.g.(Private Foundation, Partnership, Other Development Actor, NGO, Higher Education/Research Institution, Commercial Enterprise, Start-up....)

Ie. What is the size of the lead applicant organization?

- 0-10 11-50 51-200 200+

If. Organization website URL (if applicable)

Ig. Company/Charity Registration Number (if applicable)

Section 2 Your Innovative Solution

In this section we would like you to tell us about your innovative solution and how you think it meets the judging criteria. Each question guides you through the criteria that the judges are interested in.

2a. Title of your Solution*

2b. Please provide a summary of your Solution in no more than 150 words*.

2c. Tweet your Solution*

Criterion I: Data Driven*

C1a. Please provide a short summary of your Solution.

Describe how it uses data and improves value to agricultural productivity in Nepal?

Please write no more than 200 words

C1b. My idea will use the following data sets*

Criterion 2: Impact*

C2a. What impact will your Solution have on the livelihoods of Nepali farmers' households?

Please write no more than 200 words

C2b. Please describe what type of impact you think this solutions will generate within the agricultural value chain¹ in Nepal.

Please write no more than 200 words

Criterion 3: Usability*

C3a. How will you make sure your product is desirable, of a high quality and user-friendly?

Please write no more than 200 words

C3b. Please describe any innovative features within your solution's design that have been incorporated to improve its usability and accessibility by underserved populations (e.g. households with small plots, landless households, women/girls, people with disabilities, lower-caste groups, marginalized ethnic groups, migrant farmers and other socially relevant groups)

Please write no more than 300 words

Criterion 4: Affordability*

C4a. Please describe how will you produce your idea, i.e. where will you manufacture your solutions, what materials will you use, etc.

Please write no more than 200 words

C4b. Who will buy this solution, and what is the ideal price that you would like to sell it for?

Please write no more than 100 words

Criterion 5: Growth Potential*

C5a. What do you think are the OPPORTUNITIES to ensuring your idea used by as many people as possible?

Please write no more than 200 words

C5b. What do you think are the BARRIERS to getting your idea used by as many people as possible, including women small holder farmers?

Please write no more than 200 words

C5c. What is the business model for your solution? Explain how you plan to make it financially sustainable.

Please write no more than 100 words

C5d. How will you ensure your solution does not contribute to environmentally unsustainable agricultural practices?

Please write no more than 200 words

Criterion 6: Security and Privacy*

C6a. How will your solution ensure protection of individuals data?

Please write no more than 100 words

Section 3 - Programme Evaluation Questions

3a. What percentage of women constitute the team that developed this solution?

0-10% 11-20% 21-30% 31-40% 41-50% 51-60% 61-70% 71-80% 81-90% 91-100%

3b. Please list any policies, procedures, activities, and/or strategies your organization has in place that support women and underserved groups' advancement (e.g. equal opportunity policy, equalities recruitment procedures, inclusion strategy or gender outreach group).

3c How did you hear about the prize? (Choose one and specify the name of your source: Mailing List, Social Media,Advertising, Events, News Media,Web, Personal Outreach)

3d. Why are you taking part in the prize?*

(Please select a maximum of three responses)

- » The prize inspired me to create something new.
- » The prize can show me how to transfer my knowledge/ability for new purposes.
- » The prize is a great opportunity to partner with more experienced people and organizations.
- » I am interested in winning the prize.
- » I am interested in increasing my reputation.
- » I am interested in doing something that can help people.
- » I would like to develop more partnerships.

Other, please specify _____

3e. Have you heard about there being a lack of methods/tools to translate open data into actionable and usable information for local farmers?

No never / only a few times / many times / I am an expert on that problem

3f. Have you ever thought about solving this type of issue?

No never / only a few times / many times / I was already doing it.

3g. Have you ever participated in a prize before?

Yes/ No

If yes, which one(s): _____

3h. Have you ever applied for USAID funding before*? (if so, what program?)

3i. Have you ever applied for other donor funding before*? (if so, what donor)

3j. What type of support will you need to develop your idea further*?

(Please select max 3 responses)

- » Support to develop prototypes.
- » Support to aggregate data from data experts.
- » Support to write a strong business development plan.
- » More data/information about Nepalese farmers and agriculture.
- » Legal support to ensure data protection.
- » Support to organize and run user testing.
- » In kind or financial support to develop prototype.
- » Other/s, please specify: _____

3k. Only for individuals applying with no business

Have you already secured other funding to develop your idea?

Please write no more than 50 words.



Feed the Future is America's initiative to combat global hunger and poverty. It brings partners together to help some of the world's poorest countries harness the power of agriculture and entrepreneurship to jumpstart their economies and create new opportunities.

Visit website: <https://www.feedthefuture.gov/>



USAID is the lead U.S. Government agency that works to end extreme global poverty and enable resilient, democratic societies to realize their potential. USAID carries out U.S. foreign policy by promoting broad-scale, human progress. At the same time it expands stable free societies, creates markets and trader partners for the United States, and fosters good will abroad.

Visit website: <https://www.usaid.gov>



Support Partners

Microsoft Innovation Center Nepal provides students, customers and partners with a comprehensive set of programs and services. The goal of these centers is to foster innovation and growth in local software economies.

Visit website: <http://micnepal.org/>

CIMMYT works throughout the developing world to improve livelihoods and foster more productive, sustainable maize and wheat farming. The center helps to build and strengthen a new generation of agricultural research and extension services in maize- and wheat-growing nations.

Visit website: <http://www.cimmyt.org/our-work/>

The International Centre for Integrated Mountain Development (ICIMOD) is a regional intergovernmental learning and knowledge sharing centre serving the eight regional member countries of the Hindu Kush Himalayas – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalization and climate change have an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream-downstream issues.

Visit website: <http://www.icimod.org/?q=abt>



Global Open Data for Agriculture and Nutrition (GODAN) supports the proactive sharing of open data to make information about agriculture and nutrition available, accessible and usable to deal with the urgent challenge of ensuring world food security. The initiative focuses on building high-level support among governments, policymakers, international organizations and business. GODAN promotes collaboration to harness the growing volume of data generated by new technologies to solve long-standing problems and to benefit farmers and the health of consumers.

Visit website: <http://www.godan.info/>

Implementation Parties

DAI works on the frontlines of global development. Transforming ideas into action—action into impact. We are committed to shaping a more livable world.

We tackle fundamental social and economic development problems caused by inefficient markets, ineffective governance, and instability. We work with a wide range of clients, including national and local governments, bilateral and multilateral donors, private corporations, and philanthropies. Since 1970, we have worked in more than 150 countries—delivering results across the spectrum of international development contexts, from stable societies and high-growth economies to challenging environments racked by political or military conflict.

Visit website: <https://www.dai.com/>



The Challenge Prize Centre is a hub of expertise on challenge prizes. The Centre was established to increase practical evidence and understanding about challenge prizes so they can be used effectively by governments, charities and businesses to have a tangible positive impact on society.

Visit website: <http://challengeprizecentre.org/>



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The U.S. Government's Global Hunger & Food Security Initiative

www.feedthefuture.gov