

Using Information on Results in Program Management – The case of Samarth-NMDP in Nepal



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Synopsis

Using information effectively to help manage a program enables the program team to build on what is working and to change or discontinue what is not. This adaptation is critical to ensuring that the program maximizes long-term, positive impacts within the time and money available. However, many programs find it challenging to effectively analyze and use the information they gather. This case describes the system that Samarth Nepal Market Development Program (Samarth-NMDP) has developed to analyze information on results and use it to adjust interventions and strategies. The case illustrates this system by explaining Samarth-NMDP's experience with adapting its strategy in the agricultural mechanization sector in Nepal. The case also includes specific tools that Samarth-NMDP uses in their system, practical tips from their experience, and videoed interviews with Samarth team members.

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This case describes how the program has addressed a typical challenge in results measurement. The aim of the case is to provide insights that will be useful to other practitioners facing a similar challenge. The authors do not represent the DCED or SDC, nor do the views expressed in the case necessarily reflect the views of the DCED or SDC.

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Acronyms

GBP	British Pounds
GESI	Gender and Social Inclusion
NMDP	Nepal Market Development Program
NPR	Nepalese Rupee
QSR	Quarterly Strategic Review
RM	Results Measurement
USD	United States Dollar

1 The Challenge: Using information on results to help manage a program

Using information effectively to help manage a program is the ‘pay off’ from assessing results in the field. It enables a program to build on what is working and to change or discontinue what is not. This adaptation throughout a private sector development program is critical to ensuring that the program maximizes long-term, positive impacts with the time and money available.

Nevertheless, many programs find it challenging to effectively analyze and use the information they gather. During implementation, program teams often feel pressure to get things done, leaving not enough time to analyze the information they gather and feed it into decision making. Furthermore, the emphasis in results measurement is often on reporting, rather than on using the findings in management. Therefore the focus of many results measurement systems is on gathering information on results and producing reports that describe them. There is also often an assumption that if useful information is available, it will be used. However, experience shows that without specific time allocation for reviewing findings and a concrete system for analyzing and feeding information into decision-making, information remains on the shelf. Compounding the problem, most guidance on results measurement tends to focus on the technical issues of gathering information, rather than on the systems for analyzing and using it.

This case describes the system that Samarth Nepal Market Development Program (Samarth-NMDP) has developed to analyze information on results and use it to adjust interventions and strategies. The case illustrates this system by explaining Samarth-NMDP’s experience with adapting its strategy in the agricultural mechanization sector in Nepal. The case also includes specific tools that Samarth-NMDP uses in their system, practical tips from their experience, and videoed interviews with Samarth team members. Finally, the case outlines the benefits that Samarth has enjoyed from a focus on using information to improve.

2 Introduction to Samarth NMDP

Samarth-NMDP is a five-year, UK Aid-funded rural market development program that aims to reduce poverty in Nepal by increasing the annual incomes of 300,000 smallholder farmers and small-scale entrepreneurs by 80 GBP on average. The 15.2m GBP program is implemented by Adam Smith International, The Springfield Centre and Swisscontact.

Samarth-NMDP uses the ‘Making Markets Work for the Poor’ approach to its work² with the private and public sectors. Through this approach the program acknowledges the presence of the poor in market systems; that a change in these systems is required to improve their position (as producers, laborers and consumers), and that this change needs to be brought about through facilitating sustained change in the behavior of market players in the private and public sectors.



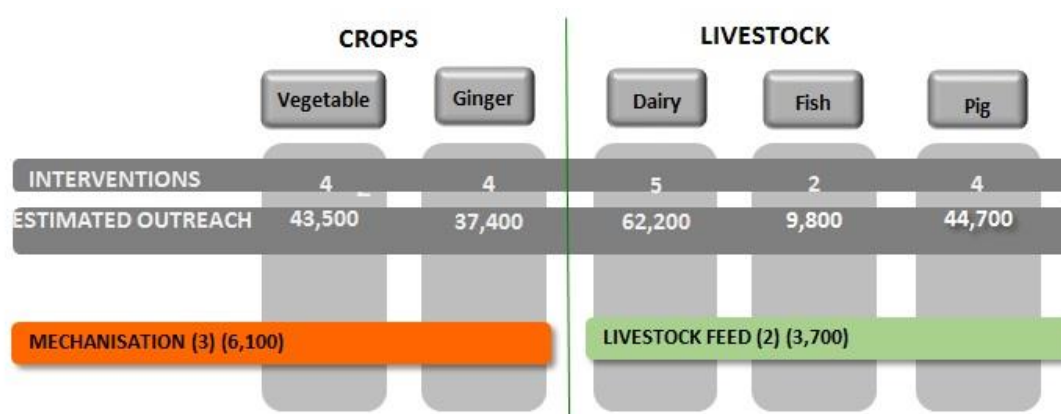
² See <http://beamexchange.org/en/guidance/m4pguide/>

The program has two aims:

- that the underlying pro-poor performance of rural sectors is improved; and
- that the capacity for effective pro-poor market development among key stakeholders, including government, throughout Nepal is enhanced, leading to positive and sustained practice change.

To achieve the first aim, Samarth-NMDP works in nine rural sectors. Seven of these are agricultural: dairy, fish, pigs, vegetable and ginger, with livestock feed and mechanization as cross-cutting agricultural sectors. The program also works in tourism and media.

Figure 1: Samarth-NMDP Agricultural Portfolio



The program is mandated to work in 27 districts; it actually reaches 46 districts through facilitation with market players whose reach is not confined. To learn more, see the [Samarth-NMDP website](#).

3 The challenge of using information in Samarth

Samarth has always placed a strong emphasis on using information to guide decision-making. However establishing systems and a culture around using information is not straightforward, and Samarth has faced challenges in doing so. These challenges have evolved as the program has progressed.

3.1 Early challenges

Initially, Samarth-NMDP was a decentralized program. Samarth-NMDP managed the portfolio as a whole with responsibility for the sector strategies, the composition of the overall portfolio, the quality of implementation, and supporting and building the capacity of contracted NGOs. The local and international contracted NGOs were responsible for the market analysis, intervention design and implementation in each sector. The decentralization made it difficult to effectively use information for decision-making.

The arms-length relationships between Samarth-NMDP and the contracted NGOs made it difficult to develop a unified culture and way of working throughout the program that emphasized analysis and the iterative use of information to improve interventions and



[Click to view](#) **Tim Stewart, Samarth Portfolio Manager**, discuss challenges to, and mechanisms for, using information in Samarth.

sector strategies. Diagnosing market constraints requires frequent discussions and iterative improvements in understanding. Facilitating changes together with market players requires rapid feedback loops that enable implementers to adjust their offers and interactions with market players. This type of approach is difficult to manage through the long reporting lines between two organizations for the following reasons.

- Separately housed teams do not have the same opportunities for frequent formal and informal interaction and communication as those housed together.
- Contractor – implementer relationships often establish an expectation of formal communication, which excludes the informal, frequent interaction necessary to build understanding and make rapid improvements.
- Learning from one sector is not readily transmitted to others because these are managed by separate organizations.

The challenge of decentralization was exacerbated by the fact that an M4P approach was quite new in Nepal. The staff of both Samarth and the contracted NGOs did not have experience with the approach, nor with the flexibility of using information frequently to adjust interventions and strategies.

3.2 Later challenges

Mid-way through the program, the decision was made to change the delivery model so that the core Samarth team would take on the principle responsibility of market facilitation (intervention design, implementation and results measurement). Two local organizations stayed with the program but their staff came to work in the Samarth office so that the whole



team was physically together. The shorter communication lines made it much easier to build staff capacity and develop a culture and system for using information regularly to improve interventions and strategies.

By that time, Samarth's portfolio had grown and matured significantly. This meant the program had become more

complex in nature. There were more staff, more and different types of partners and more information coming in both from market analyses and from measuring results of existing interventions. This meant that the team had to handle more information and different types of information. The sophistication of their analyses also had to improve so that it could drive more complex interventions and sector strategies with a wider variety of market players. The system had to accommodate a wider portfolio and more people who needed to be informed about findings and lessons learned in the various sectors. Thus the challenge was to enable the team to handle higher volumes of more complex information at the same time as keeping the system manageable for everyone.

4 How Samarth uses information in program management

At the heart of Samarth's system for using information are review meetings during which staff discuss and analyze findings from the field, and make decisions on what to do next. The meetings are complemented by daily, informal information sharing and interaction among

the team members. The system is underpinned by a learning culture in the program as well as a team structure that facilitates the flow and use of information. Below, the learning culture and team structure are first described briefly to provide a sense of the foundations of the system. This is followed by a description of Samarth's operational and strategic decision-making meetings, including the aims, inputs, agenda, participants and outputs.

4.1 Learning Culture

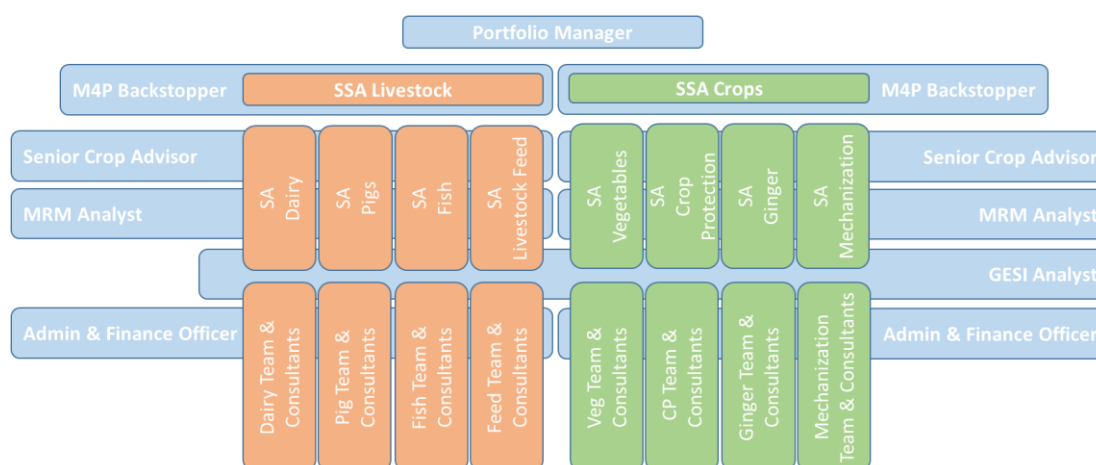
Samarth endeavors to develop and maintain a culture of entrepreneurial curiosity, information sharing and continuous improvement. Team members at all levels are encouraged to gather information regularly, not only through formal means such as market and results measurement studies but, just as importantly, through their regular interactions with market players and constant scanning for information on the sectors in which they work. Knowledge is not power in Samarth. It is the norm of the program that when team members have information, from whatever source, they share it: it is useless if it remains only with one person. It is expected, in Samarth, that this information is analyzed and fed into decision making at all levels of program management.

To operationalize this culture, Samarth management has consistently stressed, both internally and externally, that information gathering, analysis, learning and adaptation are a core part of Samarth's approach. The management has placed a strong emphasis on creating formal and informal forums where information can be readily shared, analyzed and used in decision-making. There has been a focus on verbal communication over more formal written reports because it is quicker, easier to assimilate and more current. Finally managers have aimed to lead by example, involving themselves deeply in the processes of using information to improve interventions and strategies.³

4.2 Team Structure

The Samarth agricultural team is structured in such a way as to make the flow and use of information easy. The present structure has evolved, and may indeed evolve further. It combines sector teams with cross-sector support so that the sector teams are able to work together closely at the same time as learning from other sectors.

Figure 2: Samarth Agricultural Team Structure



³ For more information on how to develop a learning culture, see Miehlbradt, A. (2015) 'Building a Learning Culture – The case of the Market Development Facility in Fiji' available on the DCED website at <http://www.enterprise-development.org/page/casestudy6>

Each team is led by a Sector Analyst (SA). The teams report to and are supported by a Senior Sector Analyst (SSA) who manages either the crops or livestock group. The Portfolio Manager oversees and supports the whole portfolio. The cross-sector advisers and the results measurement (RM) team, including the Gender and Social Inclusion (GESI) analyst, support each of the teams but also share learning across the teams. The Senior Sector Analysts and the Portfolio Manager also play an important role in ensuring that learning and insights are shared across the sector teams so that the portfolio as a whole improves.

The RM team is embedded within the crops and livestock groups with a Results Measurement Analyst physically housed with each group (reporting to the Results Measurement Manager). They assist the Sector Analysts in all aspects of results measurement including developing results chains, formulating measurement plans, setting up and maintaining intervention and sector guides, conducting assessments and holding review meetings. The GESI analyst, who is also part of the RM team, helps to mainstream research, findings and good practice across all the sectors.

4.3 Review Meetings

Samarth's review meetings are designed to enable team members to discuss and analyze information gathered and to make decisions on next steps. The meetings focus on three different levels of program operations: interventions, sectors and the portfolio as a whole. Different meetings target operational and tactical decisions versus strategic decisions, although there is necessarily some overlap between these. Table 1 summarizes these meetings.

Table 1: Samarth Review Meetings

Meeting	Participants	Frequency	Output
Portfolio Update	Sector Teams RM Team Portfolio Manager	Every 2 weeks	Updated Portfolio Matrix
Sector Update and Work Plan	Sector Team RM Team	Monthly	Updated Intervention Guides Updated Work Plan
Quarterly Strategic Review	Sector Teams RM Team Senior Managers	Quarterly	Quarterly Strategic Review Report
Annual Business Planning	Senior Managers Sector Teams RM Team	Annually	Business Plan Updated Sector Analyses

4.3.1 Portfolio Update Meeting

Every two weeks, Samarth has a Portfolio Update meeting. The meeting centers on operational issues with a focus on sharing real-time information. The aim of the meeting is to update all implementation staff on the status of interventions as well as to share operational information that will facilitate cooperation and efficiency. Specifically, the meeting aims to ensure that all staff members:

- understand what is going on in their own and other sectors;
- identify opportunities for cross-sectorial collaboration;

- plan field trips and ensure that people can participate in them;
- highlight successes and provide early warning of potential risks and hazards.

The meeting is held at the same time every two weeks, irrespective of who is present in the office and all implementation staff members in the office attend. This consistency ensures everyone knows when the meeting will take place and it is not delayed. The meeting takes no more than two hours, which provides enough time for information sharing and identifying opportunities for cooperation without becoming burdensome on staff time.

Agenda: The agenda is set around a [Portfolio Summary Matrix](#) tool. This tool provides an operational summary of all the interventions in the portfolio. For each intervention, it includes the current status and next steps at each Portfolio Update Meeting.

During the meeting, each sector analyst goes through the interventions in his/her sector giving the current status and expected next steps, with a brief opportunity for discussion. If more detail is required, the Intervention Guide and Results Chains are referred to either in the meeting if time allows or afterwards with those concerned. During the meeting, real-time information is exchanged, such as changes in the markets, what individual market players may be planning and relevant movements in government. Information is of little use without analysis however. So team members are encouraged to suggest follow-up discussions when needed or highlight any implications for the design of interventions or the activities with market players. Follow up actions are agreed, such as setting up a meeting, gathering more secondary information, initiating the design of a new activity or partnership agreement, going on a field trip or designing a new indicator to measure a particular type of result.

Inputs: The portfolio summary matrix is updated on the Friday before the Monday meeting. That way each sector analyst is prepared to summarize the status of, and next steps for, the interventions s/he manages and everyone has a summary in advance of the meeting.

Outputs: During the meeting, the team makes any necessary revisions to the previous Friday's update of the Portfolio Summary Matrix. This provides a written record of the meeting and also informs the discussions in the other meetings and the next Portfolio Update Meeting. Over time, the matrix also provides a record of the development of each intervention and is used to track key performance indicators and milestones.

Tip: Encouraging use of real-time information

The Samarth team also makes use of other real-time information sources such as the [Media Monitoring Report](#) produced by the Communications Team, which picks up any stories in the Nepali press related to the program sectors and wider political economy. The team is also encouraged to read the newspapers and journals that the program subscribes to, and print and share any articles of interest on a notice board (placed by the coffee machine!). The team also writes any market intelligence gained – even rumors – on this notice board.

4.3.2 Sector Update and Work Plan Meeting

The aims of the Sector Update and Work Plan Meeting are to review the progress in each of the interventions in a sector, to make any needed changes in the intervention tactics and strategy, and to plan for the next month's work in the sector. The meeting covers operational and strategic decisions at the intervention level.

The participants are the sector team, the relevant RM Analyst, the RM Manager and the Senior Sector Analyst. This relatively small group allows for an in-depth discussion of the interventions in the sector.

Agenda: In the meeting, the group goes through each of the interventions, using the results chain as a guide. They discuss whether, and to what extent, changes are happening as expected, using the findings from recent information gathering. A key aid in this process is color-coding of the results chain (see Tip Box for details). The color-coding helps the team to visualize where change is progressing well and where there are 'blockages' or 'sticking points.' The 'blockages' indicate that the strategy or tactics being used are unlikely to lead to the expected results. The team can then discuss why there is a 'blockage' and possible alternative tactics or strategies 'unblock' it.

Tip: Color-coding Results Chains

Color-coding provides a tool to clearly visualize the progress of change through a results chain. In Samarth, the results chains are coded using 'traffic light' ratings. The rating is an assessment of the actual change for each results chain box relative to the expected change for that box to date.

- Green indicates change as or above expectations.
- Yellow indicates change is occurring but not to the extent expected.
- Red indicates no change or negative change.

For an example, see the next section on the Samarth mechanization intervention.

Samarth emphasizes that a red box is not a sign of poor performance. It is only poor performance if the team fails to identify and respond to the red boxes.

The discussion focuses around the following questions:

- **Facts: what is happening?** Are changes happening as expected? If not, at what level did change stop happening as expected?
- **Analysis: how is the intervention going?** Why did the intervention activities lead, or not lead, to the expected market system changes? Why did those changes lead, or not lead, to the expected enterprise performance improvements? Are improvements at the market system and enterprise performance levels likely to be sustainable? Why or why not? Is the partner likely to adapt or expand the new way of working? Why or why not? Is change appropriately addressing/incorporating gender issues? Why or why not?
- **Information: what more do we need to know?** What additional information do we need to make decisions? Who will get that information, how, by when?
- **Decisions: what should we do next?** How will we modify the strategy or tactics in this intervention? Are we ready to expand the intervention? Do we need to consider dropping the intervention?
- **Learning: what have we learned? How will we apply it?** What are the key lessons learned? Can we apply lessons from one intervention to another? Is this lesson relevant to share with other sectors?

At the end of the meeting, the team uses their discussion as the basis for updating their work plan. The work plan is outlined for three months on a rolling basis and updated during each Sector Update and Work Plan meeting.

Inputs: The following are inputs to the Sector Update and Work Plan meeting.

- **Intervention guide** including results chain and projections updated at the last meeting;
- **Information collected** including the written findings from measuring results as well as team members being prepared to share verbal summaries of other information collected; and

- **Preliminary suggestions** which involves staff coming prepared with ideas on the analysis and appropriate next steps.

Outputs: Based on the discussions in the meeting, the sector team updates the intervention guide including the results chain and projections. Updates to the results chain may just mean updating the color-coding, or it may include changes to the results chain itself if the team has revised the intervention strategy. The meeting also produces an updated sector work plan.



[Click to view](#) Sanju Joshi, Samarth Results Measurement Manager, discuss Samarth's regular review meetings.

4.3.3 Quarterly Strategic Review

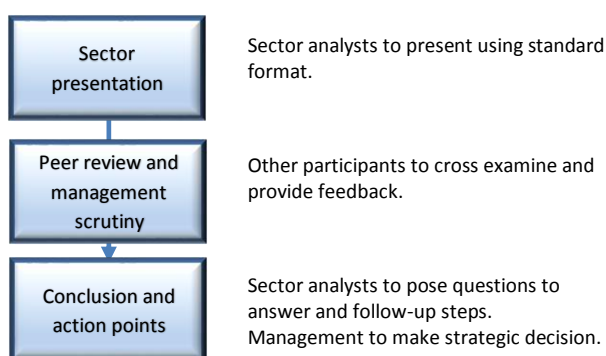
Every three months, the team holds a Quarterly Strategic Review (QSR). This meeting focuses on the sector strategies and usually takes one day for crops and one day for livestock. Following are the objectives of the QSR.

- Review and discussion of progress towards stimulating market system change over the past three months. On the basis of this discussion, reassessment of the sector strategy and identification of potential adjustments.
- Identification of the key questions for investigation over the next three months and beyond, and developing a plan to answer them.
- Reflection on successes and failures, and capturing relevant learning.

The QSR involves the whole implementation team. Early in the program, when there were a limited number of interventions, the whole team sat together. Now that the portfolio is larger, the crops sectors and the livestock sectors meet separately. The focus is on reviewing and revising the sector strategies in light of progress in the last quarter. Decisions made during the QSR include introducing new interventions, and/or expanding, modifying, putting on hold or dropping ongoing interventions.

Agenda: The agenda for the QSR focuses on the sector level. It covers similar topics as the Sector Update and Work Plan meeting, but concentrates on the sector strategy rather than the interventions. The meeting covers each of the sectors one by one. The Sector Analyst leads the discussion on his/her sector, starting with a presentation reviewing progress and issues in the sector. This is followed by feedback from others and then decisions and next steps. The structure for each sector discussion is shown in Figure 3.⁴

Figure 3: Structure of Sector Discussions



The specific topics to address for each sector are determined in advance based on the progress in that sector. They cover the following types of questions.⁵

Market Dynamics

- Were our initial analysis and assumptions about the market correct?

⁴ Samarth Quarterly Strategic Review Concept Note (v4)

⁵ *ibid.*

- Have changes occurred in the broader market and other (e.g., political, social, natural) environments that call our initial analysis and assumptions into question?
- What factors in the broader market and other environments have affected, or may affect, intervention implementation and results, and how?

Sector Design and Strategy

- Are the sector objectives still achievable?
- Can we achieve the intended systemic change with our existing activities?
- Are new or different interventions needed? Is the results chain for each intervention still valid?

Leverage and other evidence of systemic change

- Are there market actors willing and able to work with us? If yes, what are the signs that they are opening up to attitude/behavior changes? How does this relate to results as set out in results chains? Are changes intended/unintended?
- Towards **'adopting'**⁶: what are the signs that this innovation is viable, has an appropriate division of labor (between the program and market players) and that there is pro-poor satisfaction with the new product/service?
- Towards **'adapting'**: what are the signs that further investments and improvements are being made by the market players, that the innovation is being mainstreamed in business practices and that the pro-poor benefit flow remains?
- Towards **'expanding'**: what are the signs that the original investment has been rolled-out, that new players are adopting similar behaviors, that there are ways for the new business model to be adopted more broadly, that the market is becoming more competitive?
- Towards **'responding'**: what are the signs that the market is becoming more resilient to shocks, that a range of market players are re-configuring their own roles and responsibilities?

Cross-cutting Issues

- How have sector strategies incorporated issues of gender and social inclusion? How is the economic advancement of disadvantaged groups likely to be furthered with the systemic change envisioned/achieved?
- What can be done to better integrate gender and social inclusion issues into the sector strategy? Is there anything we need to track or measure in this regard?
- What issues related to gender and social inclusion arose during the past three months?
- Have the risks of 'doing harm' changed in terms of market displacement, gender and social inclusion?

Lessons Learned

- What lessons can we take from the past three months and what are their implications for intervention strategy, design, implementation, and results?
- Can these lessons be applied to other Samarth-NMDP sectors/interventions?

Inputs: It is important that all staff come to the QSR well prepared to discuss each sector strategy. This

Tip: Learning from Success and Failure

Each of Samarth's interventions includes calculated risks. Therefore, some succeed and others do not or only succeed partly. Samarth aims to learn both from what works and what doesn't. To encourage this learning, Samarth asks each Sector Analysis to share one 'success' and one 'failure' from the last three months. Typically these cover aspects of interventions, for example how to interact with a partner or what combination of activities to choose for an intervention. These are discussed to extract and share key lessons.

⁶ For more in the 'adopt-adapt-expand-respond matrix,' see <http://www.springfieldcentre.com/wp-content/uploads/2014/06/2014-03-Adopt-Adapt-Expand-Respond-Briefing-Paper1.pdf>

means they need to be updated on sector progress in advance of the meeting and to identify key issues for discussion during the meeting. This preparation ensures that the team is able to have a substantive discussion on strategy during the meeting and, therefore, come to useful conclusions on adaptations and next steps. The following are the preparations each sector team makes for the QSR:

- update intervention and sector guides including the latest findings on results;
- complete quarterly intervention progress update;
- submit to Senior Sector Analyst for comment and feedback;
- prepare presentations;
- prepare questions that need to be discussed and addressed in the following quarter;
- submit to Portfolio Managers, Stakeholder Engagement Manager, Results Measurement Manager and Project Manager 5 days prior to meeting.

Outputs: The key output from the QSR is a report that summarizes the discussions and decisions made during the meeting. The contents of the report are:

- **Findings:** answers the key questions raised in preparation for the meeting.
- **Implications for individual sectors:** summarizes actions that will be taken such as changing the strategy in a sector, starting a new intervention or conducting specific research.
- **Lessons learned:** provides a summary from the meeting.
- **Follow-Up Questions:** lists key questions for the next QSR and how these will be investigated during the next three months.

For a more detailed description of this meeting, click to read Samarth's [QSR Concept Note](#).

4.3.4 Annual Business Planning

Once a year, Samarth conducts its Annual Business Planning. This is not just one meeting, but a series of meetings and the collaborative development of documents that outline the current status of the program overall and also for each sector, and the plans for the next year.

The Annual Business Planning has two key aspects:

- a review of the portfolio of sectors to determine if changes should be made; and
- a review of the sector strategies focusing on the underlying analysis and assumptions, and the strategic direction of each sector.

The Annual Business Planning involves the entire implementation team. The portfolio review is undertaken by the senior managers supported by back-stoppers from the implementing consortium organizations. The sector strategy review is spearheaded by the sector teams but with close involvement from the Senior Sector Analysts and senior managers.

Process: The process covers two levels: the sector strategies and the portfolio of sectors as a whole. The process to review the sector strategies builds on the QSR. It addresses the same questions as outlined above for the QSR but with a more thorough review and update of the market analysis covering constraints, drivers and opportunities in the sector. Based on this analysis and a critical review of the results to date, the team agrees on adaptations to the sector strategies and outlines broadly how the strategies will be taken forward over the next year. The findings and decisions are documented in a Sector Business Plan. Writing the Sector Business Plan helps the team to distil its thinking on the sector strategy and also

provides a record that outlines the reasons for decisions to serve as support for future reflection.

The reflection on the portfolio follows a similar process. The senior managers consider changes in the overall socio-economic situation in Nepal. They discuss the results of the portfolio as a whole relative to projections. They analyze the results, looking at the progress and challenges in each sector and how the work in each sector compliments that in others. Based on the analysis, they decide on any changes to the portfolio, such as putting more or less focus on a sector or considering adding or dropping a sector. The decision to add or drop a sector may require more information and analysis. In this case, they outline how the decision would be made and the additional information needed.

Inputs: The Annual Business Planning draws on many of the documents produced throughout the year. Additional information gathering and analysis may also be done specifically to support the planning, particularly to address questions about specific sectors. However, one of the key inputs are the QSR reports, as they document not only the progress in the sectors but adjustments to the sector strategies and the reasons for those adjustments.

Outputs: The Annual Business Plan for the program.

4.3.5 Conclusion on Samarth Review Meetings

Samarth does not only use information and make decisions during the meetings described above. Indeed, the team discusses findings coming from the field every day and, when issues arise, they meet to make a decision right away if needed. However, Samarth's system of review meetings provides a structure and discipline for feeding information into decision-making. The meetings provide a regular opportunity to think critically about the program's tactics and strategies in light of experience. The meeting preparation and outputs emphasize, both internally and externally, that adaptation is at the core of Samarth's approach to maximizing results.

5 Using information to manage strategy in the mechanization sector

The benefits of mechanization to smallholders have been known ever since hand was first put to *ard* (an ancient wooden plough) over five thousand years ago⁷. Since then there has been a steady evolution of technology into the monster tractors we see today which incorporate satellite technology and automatic steering. In the mid-hills of Nepal however this process has largely passed smallholders by, and today smallholders' access to reliable and affordable farm power for cultivation is further constrained by other external factors.

Eighty percent of the 87% of Nepal's population who are engaged in agriculture subsist on less than 1 ha of land, blending a range of crops and livestock into their mixed, low external input systems. However the small farm size is partly compensated by the agro-climate, which allows for up to three crops per year of cereals, pulses, vegetables, oil crops and fodder.

⁷ [https://en.wikipedia.org/wiki/Ard_\(plough\)](https://en.wikipedia.org/wiki/Ard_(plough))

5.1 Smallholders and Cultivation

Cultivating the land is a strenuous, physical task, especially on the steep terraces of the mid-hills. Over 40% of farmers have access to draught animal power (mainly oxen and buffalo) through the 250,000 owners. Among draught oxen and buffalo owning families, it is usually women who gather forage and care for these animals – spending around an hour a day in doing so.

In some areas there is a taboo against women using oxen directly, meaning that they have to cultivate by hand and ox cultivation services if they don't have direct access. Nevertheless, even in areas where taboos don't exist, women often find they are disadvantaged in using tools designed for men, and in obtaining ox cultivation services provided by men.

Migration is also a key driver of change. Net migration from Nepal currently stands at around 384,000 people per annum and is increasing.⁸ Most of those leaving are men who would otherwise be primarily responsible for cultivating land using oxen, with women mainly performing hand hoeing and weeding. This is leading to the 'feminization' of agriculture, and importantly, the trend in the smallholder system towards less labor-intensive crops and even the abandonment of farmland.⁹

5.2 The Mini-Tiller Market System

Mechanization offers a potential solution. Tractors, hand tractors (large two-wheeled tractors) and mini-tillers (small two-wheeled tractors) can cultivate more land in the same amount of time as oxen and buffalo, and require less labor to maintain them.¹⁰ Hence mechanized services are cheaper than those provided by draught animals, affording savings of around 30 GBP per season for the average smallholder over 2-3 seasons annually. (See Table 2.)

While 23% of farmers have access to mechanized power, over 92% of this is in the flat Terai areas in the south of Nepal.¹¹ Hence the lack of draught cultivation is felt most acutely in the mid-hills, and amongst women.

THE MINI-TILLER



Hand-operated and weighing 70-120kg, mini-tillers are primarily used for cultivation, although additional attachments can be used for post-harvest operations, pumping and haulage. They typically cost NPR 45,000 – 90,000 depending on size and engine type. Owners of mini-tillers generally offer services to people in their neighborhood in much the same way as draught animal services are offered. The cost of service varies between 300 – 800 NPR per hour and around 0.5ha can be cultivated in that time.

⁸ Paudel, N. S. (2012). *Migration Trend and Remittance Inflow: The Experience of Nepal*.

⁹ Tamang, S., Paudel, K. P., & Shrestha, K. K. (2014). Feminization of Agriculture and its Implications for Food Security in Rural Nepal. *Journal of Forest and Livelihood*, 12(1), 20–32.

¹⁰ Collecting fodder for oxen, and mucking them out is mainly women's work and takes over an hour a day for those who own them.

¹¹ Shrestha, 2011

Table 2: Tillage cost – Oxen vs. Mini-tillers (NPR)¹²

Area	Oxen	Mini-tiller	Savings per season
Ropani (0.05 ha)	700	400	300
0.77 ha (avg. landholding)	10,780	6,160	4,620 (GBP 30.8)

Mini-tillers therefore offer a potential solution to the problem of an under-supply of farm power in the hill areas of Nepal. There is no manufacture in Nepal and therefore all mini-tillers are imported – mainly from China. There are around nine major importers of mini-tillers operational at present. These sell through independent dealers in 30 districts. Annual combined sales of mini-tillers amount to around 900 (a proportion of which are replacements). Most of these sales are via three companies that are shifting their strategies towards sales in the mid-hills where mini-tillers are well-suited to the terrain.¹³

A major driver for importers/dealers to sell in the mid-hills is a subsidy program of the government. Subsidies are provided to individuals and cooperatives which reduces the cost by 50%. The scheme is administered by local government and uptake is low (around 250 sold under the scheme to date). Sales are constrained by the same factors that constrain sales through the private sector.

When Samarth first started considering an intervention on mini-tillers, the following constraints were identified:

Demand Constraints

- Knowledge and information:** Mini-tillers were a new technology and most farmers hadn't heard of them, and even fewer had used them. Some NGOs had conducted trainings, and there had been efforts by the government extension service. However the dealers and importers were not involved in the training and participants often did not get enough information to be able to purchase or use a mini-tiller.
- Perceptions of smallholders:** Some farmers had seen mini-tillers used by others, which had mainly been received through government and NGO subsidies, and many had been poorly used because of a lack of training and adequate information (see above). This had led to negative perceptions in some places and increased some farmers' perceptions of risk.



Supply Constraints

- Weak marketing:** Importers and dealers had not paid much attention to marketing and promotion. This was partly because mini-tillers were only a small part of their business, and partly because they were selling to the government for their subsidy

¹² It is possible to plough 2 ropanis (0.1ha) per day using bullocks and 1ha per day by mini-tiller.

¹³ Farmers in the flat terai area favour tractors and two-wheeled tractors as they have larger land parcels and flatter land, and these are more versatile.

program. There was no investment in demonstration to show the value of the mini-tillers or training to help farmers use and benefit from them.

Click to see a [diagram summarizing the constraints identified in the mini-tiller market](#).

5.3 Samarth's Initial Strategy and Approach

Samarth's vision was to see smallholder farmers accessing mini-tiller services and enjoying the benefits of cheaper, more timely and better cultivation services than those provided by oxen. This did not necessarily mean that smallholders would own mini-tillers however, but that those in rural communities who did own them were able to provide affordable services to smallholders.



[Click to view](#) Beikash Gubhaju, Samarth Sector Analyst, discuss Samarth's work in mechanization.

To address the above constraints, Samarth initially visited all of the three major importers with an offer to assist them to embed training services into their marketing and to expand their retailer network in the mid-hills. The idea was that a consultant would build the capacity of the importers and detailers to deliver the training. The consultant would ultimately become a business service provider to the industry providing capacity building to other importers and their dealers. Samarth envisaged the costs of this model being borne by the importers, paid for by the margins on increased sales. Figure 4 summarizes the planned business model.

Figure: 4: Initial Business Model



One importer was selected on the basis of their scale (second largest) and willingness to try new ideas and work began in January 2014. The importer designated their Marketing Officer and a Technician to conduct two trainings in each of two eastern hill districts of Ilam and Terhathum. In all 36 farmers and small entrepreneurs attended, and sales of mini-tillers in both the districts picked up: 22 mini-tillers were sold and an additional 15 smallholders were served.

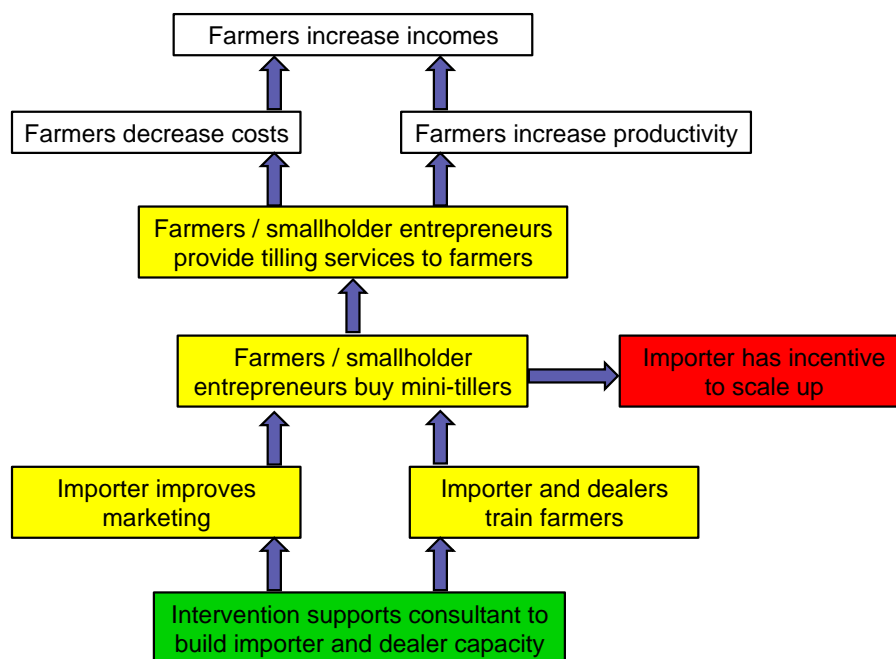
5.4 Analysis of Initial Results

The initial results of the intervention looked favorable, and Samarth-NMDP was optimistic that the importer would continue to grow the model, however this was not the case. Through informal review and conversations with the importer, Samarth learned that:

- the cost of embedded farmer training services was fairly high because it involved key staff members (Marketing Officer and Technician) who had a wider role in the business;
- the importer was also involved in other, more profitable business areas such as selling heavy construction equipment, so they had little incentive to put much effort into selling mini-tillers. Indeed they later exited the mini-tiller market altogether.

As the intervention progressed, the team used the information they were finding to color code the intervention results chain during the monthly sector meetings. A simplified version of the results chain after the initial trainings and mini-tiller sales is provided in Figure 5. The results chain provided a focus for analyzing progress and critically assessing the initial approach.

Figure 5: Color Coded Results Chain



The findings on the importer's point of view showed that there was a 'blockage' in the results chain. While this was the most obvious issue, the team also raised concerns arising from attendance at the trainings and interactions with farmers during and after the training. The team asked themselves key questions about the mini-tiller market and the initial model, including:

- Did training need to be embedded in the mini-tiller importer?
- Why weren't more farmers interested in mini-tillers?
- When farmers were interested, could they easily get a mini-tiller?
- Was owning a tilling service business accessible to poor and disadvantaged people in the mid-hills?

These questions could not be answered immediately. So, the team made plans to gather more information on the mini-tiller market. The findings of the subsequent field research are summarized below.

Demand constraints

Lack of training still remained a key constraint, but the team looked for other market players who might be able to address this problem. In addition to this, the team identified another constraint as they spoke to market players and other development actors (such as CIMMYT¹⁴):

- **Cost and finance:** Mini-tillers cost 450-650 USD, which represents 20-30% of GDP per capita¹⁵ and is a significant barrier to entry for the average smallholder. The formal finance sector did not offer favorable terms for machinery loans (2 year, low interest loans), and no hire purchase is available from dealers.

Supply constraints

- **Lack of dealers in hill areas:** Because the technology is virtually unheard of in the hills, potential dealers are thin on the ground. There are high risks involved in becoming a dealer for an unproven technology.
- **Lack of mini-tiller stock in hill areas:** Those dealers that are present in the hills have to pre-finance stock, and thus are limited in the numbers of mini-tillers they have available for sale. If demand rises due to increased interest driven by marketing and training, the three-month lead-time for import makes it challenging to keep up.

Action Research on GESI

In addition to examining the above constraints, Samarth initiated some action research to understand the barriers as well as opportunities for female/disadvantaged groups to become mini-tiller service providers. The findings could then be used to help importers and



dealers further refine their marketing strategies to these groups, and send positive marketing messages.

The research consisted of working through a dealer to supply a mini-tiller (free of charge) to two women and two landless low-caste operators with the necessary training. The team monitored their progress to see how they fared, what they did with the mini-tiller and what barriers, if any, they faced in supplying services.

All four participants started using the mini-tiller and also started providing services to other farmers. For a male farmer belonging to the disadvantaged groups, there didn't seem to be any social/caste barrier to servicing higher caste farmers. The female service providers faced difficulties in that mini-tillers are heavy to start and operate. However, it was observed that if given the opportunity to own a mini-tiller, the women found novel ways to use them. One of the female recipients hired an operator who provides services taking an hourly cut for the work.

¹⁴ The International Maize and Wheat Improvement Centre <http://www.cimmyt.org/en/>

¹⁵ <https://www.cia.gov/library/publications/the-world-factbook/geos/np.html>

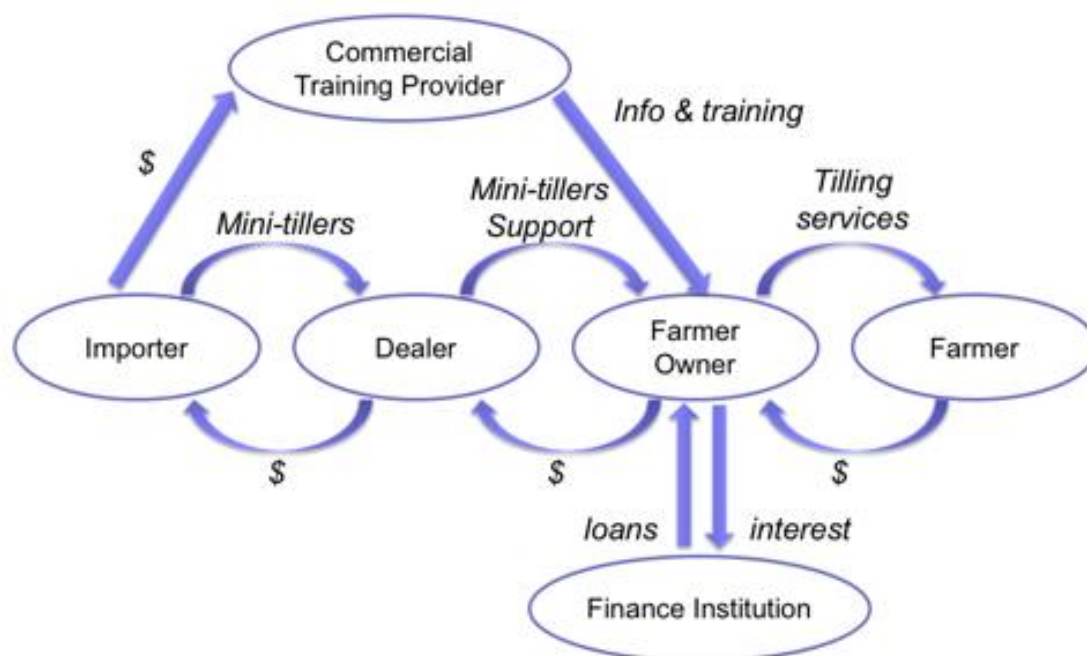
5.5 Samarth's Revised Strategy

Samarth's critical reflection and additional information gathering led to a revised strategy for the intervention, with the aim of ensuring that the business model would be sustainable and likely to spread. Firstly, Samarth looked at the training model and realized that, rather than each company developing their own in-house team to deliver training to prospective buyers, they could potentially outsource this. The program therefore sought potential commercially-driven training providers and found several who were mainly delivering manpower development services aimed at improving the skills of migrant laborers in construction etc. One of these was interested in looking at new markets – especially agriculture.

Secondly, Samarth looked again at other factors that might be inhibiting the purchase of mini-tillers. Clearly lack of finance was potentially chief among them, so Samarth approached a number of finance institutions. One of these said they had been planning to release an agricultural machinery product, but were concerned that without adequate training, there was a risk that buyers would not be able to reap the benefits of the machinery and repay the loan.

Samarth also went back to analyzing other importers of mini-tillers and chose another importer whose sole focus was on agricultural machinery. This importer focused mainly on 2-wheeled tractors and their dealership network was largely limited to the Terai. However they were looking to expand their business in the hill districts and saw increasing promotion of mini-tillers as an opportunity to do so.

Figure 6: Revised Business Model



Samarth brought these three market players together and showed them the benefits that each player could reap out of working together on developing a 'package'. This consisted of a training module for farmers and entrepreneurs considering buying a mini-tiller on operation, repair and maintenance of mini-tillers and, importantly, how to run a small service business, as well as information on loan products available for financing their purchase. The findings of the action research were used to help the partners tailor their

marketing messaging so that they are open to women and disadvantaged groups who may be important customers for them. This model, illustrated in Figure 6, was initially rolled out in five districts, and has continued to expand.

Click to see [Samarth's revised results chain](#) for the intervention.

5.6 Analysis and Thinking Going Forward

The intervention has now been running for two seasons and the importer has adopted the out-sourced training model in ten districts. To date this has led to additional sales to 61 smallholders and service providers who provide services to 8-10 other smallholders on average: 490-610 in total.

The Samarth team continues to discuss findings and analyze progress during monthly Sector Meetings and QSRs. Key points from the discussions are summarized below.

Despite finance being available as part of the joint venture, only four mini-tillers have been sold with financing. Hence, the team suspects that finance may not be as big a constraint as previously thought. Many buyers were oxen owners, selling them to buy a mini-tiller. Others had access to savings or informal loans from family members etc. Also the team thinks that some may have been put off by the interest rates that, though they are in line with market rates, are still high. This is a point for further investigation.

Now that mini-tillers are starting to become popular in some areas, the team is finding that their discussions with market players are highlighting additional constraints in the mini-tiller market:

- **Lack of spare parts:** Importers generally keep a limited stock of spare parts but do not release them to dealers unless they are specifically requested. This leads to delays in supplying them to where they are needed. In addition, buyers are often unaware of where they can get the spare parts.
- **Lack of quality repair services:** Because of the novelty of mini-tillers in the hills, there are few mechanics experienced in their repair. Those that are available tend to be employed by the importers and may have competing demands on their scarce time.
- **Low versatility of current mini-tillers:** Mini-tillers are mainly sold just for cultivation, which means they are only used for a few months of the year. This limits the range of services that can be provided and the income they can generate for potential owners, and hence their value proposition. Additional attachments such as generators, pumps and post-harvest processing (such as maize shellers) are available from manufacturers. In addition, NGOs such as CIMMYT have worked with local fabricators to develop designs and prototypes.



Through informal conversations, review meetings and information gathering in the field, the mechanization team is considering how to further adapt their strategy to address these constraints. Ideas include:

- Working with the Ministry of Agriculture and/or the recently developed Nepal Agricultural Machinery Entrepreneurs Association (NAMEA) to develop a training and accreditation process for motorbike and other mechanics in hill areas to offer services to mini-tiller owners.
- Part pre-financing of mini-tiller stock and additional attachments to offset some of the risk of placing these with dealers and to stimulate financing.

In addition, the mechanization team is starting to enquire as to why other importers are not copying the out-sourced training model and approaching the training provider. Samarth may look at ways to support the training provider in offering discounted training services to other importers to stimulate uptake of the training services among importers.

Thus, Samarth's process of analyzing results and feeding them into decision-making continues. With each adaptation in strategy, the team gathers new information that they use to continue developing and improving their intervention and sector strategies.



[Click to view](#) a Samarth mechanization review meeting and Tim Stewart, Samarth Portfolio Manager, describe Samarth's recent discussions on mechanization.

6 Lessons and Benefits

6.1 Lessons

Several key lessons have come out of Samarth's experience with using information on results to improve strategies and the implementation of them.

The most important information tool is an enquiring mind

Samarth places a high importance on developing and maintaining a culture of enquiry right through the team. Asking 'why' and 'why not' of themselves and each other in an honest and open dialogue is key to getting to the bottom of issues in the management of interventions.

Information is best stored in clouds not puddles

Samarth sees the team as a cloud for storing and using information. As such, the more people who are informed, the more dense the cloud. While formal documents such as market analyses and reports are useful to inform strategy and mark events such as the end of an intervention, they tend to become stagnant rather quickly.

Results Measurement is a service, not a function

Samarth views the Results Measurement team as providing a valuable service to the sector teams in the design of activities and interventions, reviewing performance and providing information to aid in management decision making. While members of the RM team have valuable analytical skills that sector teams may lack, Samarth seeks to avoid simply delegating tasks to them. Rather, they are there to assist the sector teams rather than doing tasks for them.

6.2 Benefits

While Samarth's focus on gathering information and regularly feeding it into decision-making takes time, the benefits are significant.

It increases impacts and sustainability

The most important benefit that Samarth gains from its use of information is more results and more sustainable results. Markets change and interventions do not always work out as expected. At the same time, new opportunities for increasing impacts can arise from existing interventions. Only by investigating, analyzing critically and adapting can the team maximize positive, long-term impacts within the available time and resources.

It increases staff empowerment and satisfaction

The Samarth team thrives on the opportunity to understand how their actions have influenced the market and benefited the target group. Analyzing results and then developing ways to improve interventions provides staff with a concrete way to contribute to the program goals. Seeing their contribution develop and grow over time increases staff motivation and satisfaction.

It enables management to make timely and effective decisions

Because Samarth's system promotes regular and consistent information gathering and analysis, managers have the information they need to make decisions – at whatever level of the program – when they need it.

It shows donors and other stakeholders that Samarth is using resources effectively

Samarth's system provides them with a documented history, showing how they have adjusted strategies and implementation to use resources to most effect. They can clearly explain when and why they have dropped interventions and how they have used lessons learned to design more effective ones. This provides a powerful tool in demonstrating to the program donor and other stakeholders that Samarth uses its resources both effectively and efficiently.

Annexes:

1. [Portfolio Summary Matrix example](#)
2. [Media Monitoring Report example](#)
3. [Quarterly Strategic Review concept note](#)
4. [Diagram summarizing the constraints in the mini-tiller market](#)
5. [Mini-tiller intervention revised results chain](#)