

*Review of*  
**ASA's Agriculture Support Services**  
*to*  
**Bihar Rural Livelihood Promotion Society**

*by*  
**S.C.Rajshekar**

*for*  
**Action for Social Advancement (ASA)**  
**Bhopal**



**Symbiotec Research Associates**

517, "Amrita Nilayam", 24<sup>th</sup> 'A' Cross, 18<sup>th</sup> Main  
Judicial Layout, Yelahanka, Bangalore 560 065

Tel: 080-65351552, 9341443217

Email: [sra@srarural.net](mailto:sra@srarural.net) , [sra\\_raj@hotmail.com](mailto:sra_raj@hotmail.com)

**October, 2009**

---

---

## Table of Contents

<b>1.0</b>	<b>BACKGROUND</b>	<b>4</b>
<b>2.0</b>	<b>OBJECTIVES OF THE REVIEW</b>	<b>5</b>
<b>3.0</b>	<b>METHODOLOGY &amp; APPROACH</b>	<b>5</b>
<b>3.1</b>	<b>Review of documents</b>	<b>5</b>
<b>3.2</b>	<b>Discussions with project staff of ASA, Purnia</b>	<b>7</b>
<b>3.3</b>	<b>Selection of villages for field-assessment</b>	<b>10</b>
<b>3.4</b>	<b>Field visit and discussions</b>	<b>10</b>
<b>3.5</b>	<b>Wrap-up meeting with ASA and BRLPS</b>	<b>11</b>
<b>4.0</b>	<b>LIMITATIONS OF THE REVIEW</b>	<b>11</b>
<b>5.0</b>	<b>FINDINGS</b>	<b>12</b>
<b>5.1</b>	<b>Physical outputs</b>	<b>12</b>
<b>5.2</b>	<b>Yield performance of trials</b>	<b>14</b>
<b>5.3</b>	<b>Response of SHG-farmers to PVSP in Wheat</b>	<b>14</b>
5.3.1	Recall of varieties	14
5.3.2	Recall of the PVSP process	15
5.3.3	Response to results of PVSP trials	16
<b>5.4</b>	<b>Training &amp; Capacity building</b>	<b>18</b>
5.4.1	Training for technology transfer	18
5.4.2	Training targets & their needs	18
5.4.3	Training content	19
5.4.4	Training delivery	20
5.4.5	Training & capacity building – overall observations	21
<b>5.5</b>	<b>Village Resource Persons</b>	<b>22</b>

---

---

5.5.1	Selection of VRPs	22
5.5.2	Training of VRPs	23
5.5.3	Management of VRPs	24
5.5.4	Quality of VRPs	25
<b>5.6</b>	<b>ASA’s interventions &amp; Village Organisation</b>	<b>25</b>
5.6.1	VO as procurement agency	25
5.6.2	VO as monitoring agency	26
5.6.3	VO & PVSP process	26
5.6.4	VO & its role in future	26
5.6.5	VOs hiring VRPS	26
5.6.6	Overall observations on VOs	27
<b>5.7</b>	<b>Producers’ Company formation &amp; role</b>	<b>27</b>
<b>6.0</b>	<b>SUGGESTIONS</b>	<b>28</b>
<b>7.0</b>	<b>ANNEXE 1 TOR FOR THIS REVIEW</b>	<b>30</b>
<b>8.0</b>	<b>ANNEXE 2: ASA-BRLPS AGREEMENT</b>	<b>35</b>
<b>9.0</b>	<b>ANNEXE 3: PVSP &amp; SRI – A BRIEF NOTE</b>	<b>40</b>

---

## **1.0 Background**

The Government of Bihar through the Bihar Rural Livelihoods Promotion Society (BRLPS is an independent society promoted by the Government of Bihar) is implementing a 5-year project with funding support from the World Bank in the districts of Mujaffarpur, Madhubani, Gaya, Nalanda, Khagariya, and Purnia.

The purpose of this project is basically to improve the social as well as economic condition of rural poor community by impacting their livelihoods. This is to provide an opportunity to the rural poor and disadvantaged community to improve their own socio-economic condition and hence a better quality of life.

Agriculture is the main source of livelihood for more than 80% of rural Bihar. However, it is characterized by tiny stamp-sized landholdings, very low yields, very low cropping intensity and poor quality of seeds, leading to food sufficiency of only 3-5 months. The net result is, there is large-scale migration to make ends meet. There is however, a silver lining to this cloud, land is very fertile and ground water is easily available.

Hence, intervention to improve productivity and market access for agriculture produce was identified as a significant route to improve and stabilize the livelihoods of rural Bihar. Accordingly, it was felt that concerted efforts towards intensification and diversification of agriculture through the delivery of effective extension services for changing of varieties, inputs supply, farm knowledge services, diversification into new crops, development of irrigation infrastructure, and backward and forward linkage with the market should be undertaken under the BRLP initiative.

An intervention with the following aims was proposed:

- To develop a community based agriculture support services with special focus on introduction and promotion of improved crop varieties through following the participatory selection and adoption protocol, popularly known as Participatory Varietal Selection and Promotion (PVSP),
- To enhance productivity through System of Rice Intensification (SRI).

Action for Social Advancement (ASA) is an NGO working in the area of agriculture, especially PVSP and watershed technologies. It is a pioneer in mobilizing farmers and forming Producers' Companies and helping them access inputs and providing them with reliable market access to market their produce. Given its expertise in the

above-mentioned areas, it was hired by the BRLPS as a TSP (Technology Support Partner) to provide Agriculture Support Services to the BRLPS activities in select areas of Purnia and Khagariya districts in Bihar. The initial period of contract was for 1 year from October 2008 to September 2009. The performance of ASA as a TSP is to be reviewed by an external consultant before it is renewed for a further period of 2 years.

Symbiotec Research Associates (**SRA**), Bengaluru was entrusted with the job of reviewing the work carried out by ASA. Accordingly, Mr.SC Rajshekar, Consultant, **SRA** visited selected villages in Purnia and Khagariya districts, interacted with the participating SHGs and farmers and staff of ASA during August 14-22,2009. This report is based on the above-mentioned field visit, review of documents provided by ASA and discussion held with BRLPS officials.

## 2.0 Objectives of the review

A detailed ToR was provided by ASA to **SRA** to carryout the review (See Annexe 1).

The key areas were the following:

- i. Assessment of the progress & achievement of the activities undertaken by 'ASA' during first year of implementation against the tasks identified in the agreement with 'BRLPS' (See Annexe 2)
- ii. Assessment of the performance of the project against the output indicators mentioned in the agreement between 'ASA' & 'BRLP'
- iii. Assessment of the responses and the emerging indications against the overall output of the project (Finally which would be achieved only after third year) during the first year of implementation of the project.
- iv. Make recommendations for improvement

## 3.0 Methodology & approach

### 3.1 Review of documents

The following documents were reviewed before the field assessment was carried out:

- **ASA-BRLP Agreement:** The key outputs by the end of 3 years are as follows:
  1. An overall increase in agriculture productivity by about 30 % in the area by the end of the project.

2. Yield increment of paddy up to 200 to 300 per cent over local varieties in SRI
3. Farmers and their institution's capacity built for linking with the line departments including Krishi Vigyan Kendra (KVK), State Agriculture University (SAU) and other service providers for agriculture production and marketing related issues.
4. Increased seed replacement rate by about 5-7%, varietal diversification index by 80-100% at the end of the project. (In case of a single crop with 2 existing variety; 2-3 more varieties for the same crop will be added)
5. General awareness among farmers about technologies improved and the technology adoption rate increased.
6. The trend of customization of agriculture technologies as per local conditions increased due to strong participatory methods applied for the validation of the technologies.
7. Creating a pool of 15 Local Resource Persons
8. Two (2) nos. of Producers' Company will be formed & registered

Specifically at the end of the 1<sup>st</sup> year of implementation the outputs expected are as under:

<b>OUTPUTS</b>	<b>After 1 Year</b>
Household Covered	<b>3200 HHs</b>
Minimum 70% SHG Households will be covered	<b>2240 SHG HHs</b>
Incremental yield (Minimum 1.25 MT in 0.5 acres of land)	<b>1500 MT</b>
Village Resource Persons developed (in Numbers)	<b>15</b>

In order to achieve this, ASA would carryout the following activities:

- Carryout demonstration trials in SHG-farmer fields of PVSP in wheat and mung (green gram) *leading to increase in yield and diversification of varieties used*
- Carryout demonstration trials in SHG-farmer fields of SWI (System of Wheat Intensification) *leading to increase in yield*
- Carryout demonstration trials in SHG-farmer fields of SRI (System of Rice Intensification) *leading to increase in yield*
- Set up 2 Producers' Company
- Create a pool of 15 Village Resource Persons (VRPs)

**BRLP Interim Report by ASA:** This report covers the period from the inception of the project in October 2008 to end of March, 2009. As per this report, during this period, among other things, ASA has carried out the following activities:

- PVSP field-trials in wheat with 1400 farmers has been carried out and the results have been presented.
- SWI field trials have been carried out in 140 SHG-farmer plots and results presented
- PVSP field-trials in mung has been started and nearly 1000 families have been covered

### 3.2 Discussions with project staff of ASA, Purnia

The discussions with the Team Leader (Mr.Shreesh), Project Executives (Mr.Satish and Mr.Yogesh) and Project Assistants (Mr.Parimal, Mr.Ramprakash and Mr.Rajneesh) focused on gaining information about the following:

- **Project conceptualisation**

- One of the key reasons identified for poor yield in the area is poor quality of seed and very low seed replacement rates. In order to overcome this, ASA's intervention seeks to teach the SHG-farmers a ***participatory process*** to selecting new varieties that meet their criteria of taste, colour, etc. and are also suitable to the area. This is called the Participatory Varietal Selection & Promotion (PVSP- See Annexe 3).
- Further, in order to enhance yields, ASA has introduced System of Rice Intensification (SRI) & System of Wheat Intensification (SWI).
- To help transfer knowledge and teach farmers in the region the above-mentioned processes and skills, ASA is training 15 Village Resource Persons (VRPs). These are local persons who will work with ASA during the project and later on will be hired by the respective Village Organisations<sup>1</sup> that they are currently associated with. In addition, the VRPs are expected to provide agricultural support and advisory services to the farmers of the region. Thus, they are important human resources ASA is helping develop.

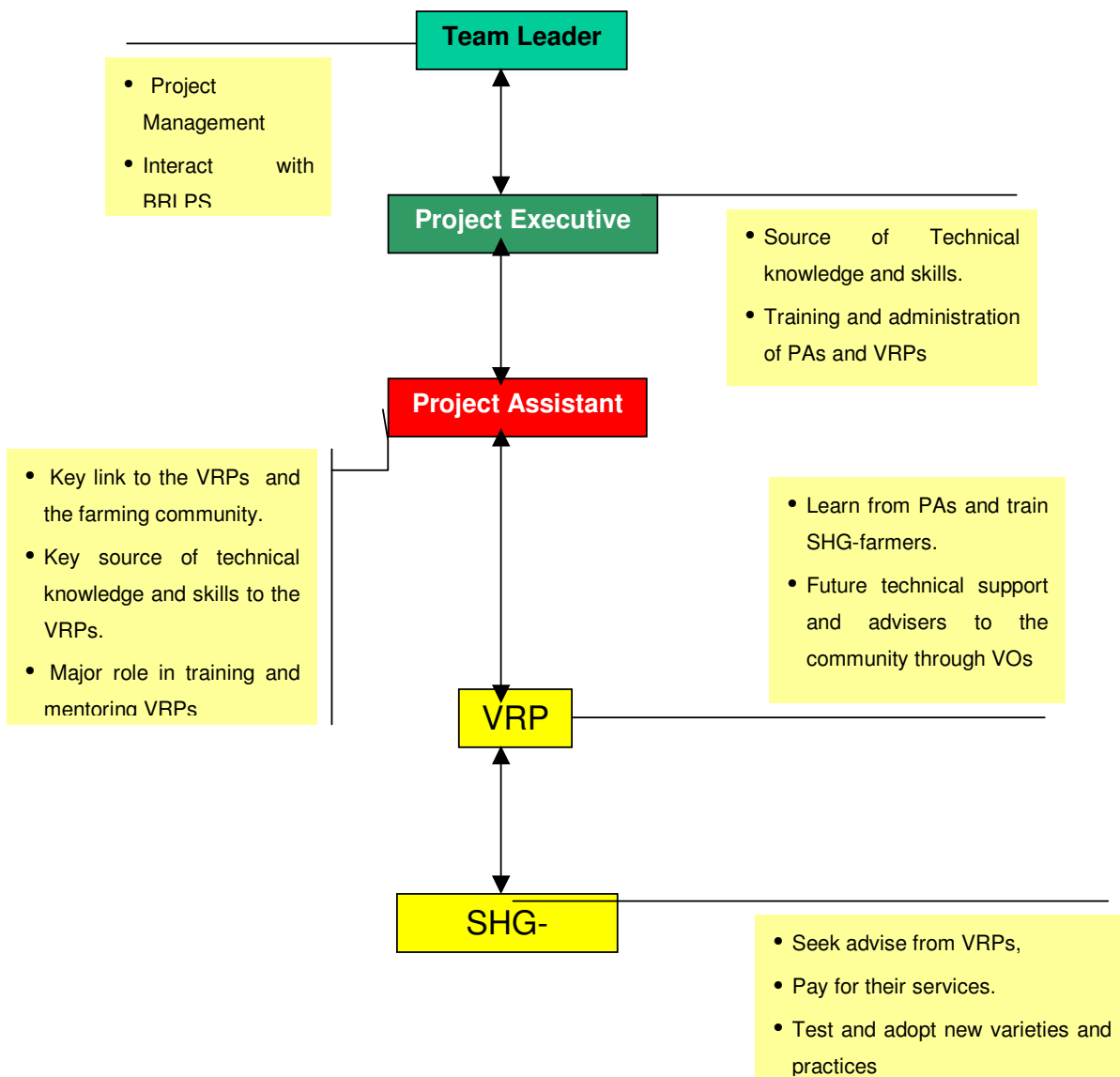
---

<sup>1</sup> A group of SHGs form a Village Organisationm which has specific roles that are discharged through specific committees such as Purchase Committee, Supervisory Committee, Credit Committee, etc. The VOs are formed and nurtured by the BRLPS staff and are not the responsibility of ASA.

- Finally, in order to help farmers of the region procure quality inputs at affordable prices and access markets for their increased outputs, Producers' Companies would be set up.
- Thus, the project as it is conceived not only plans to introduce processes, skills and knowledge to enhance yield, but also plans to create human assets (VRPs) who would be available to advise and serve the community. Further, a farmers' institution is proposed to help provide a firm organisational basis for the VRPs to work with the farmers.

▪ **Project staffing & structure**

**ASA Staff & Key Roles**



The above schematic shows the various staff position in the ASA team and their key roles. The first two viz., Team Leader and Project Executive have significant administrative roles as well and hence have the same colour code. Given the context of the project, the role of the Project Assistant is vital. He is expected to provide technical training to the VRPs as well as mentor them so that their managerial and business capabilities are built up as well for the future roles expected of VRPs. Hence the Project Assistant is coded in red.

The VRPs and the SHG-farmers are drawn from the local community. They do not form part of the ASA team. Hence, they are colour coded differently. The VRP is the most important human asset being created to serve the farming community in the area. S/he is the most important and the very first point of contact for the SHG-farmers. Hence, the training and capacity building of the VRPs in terms of technical knowledge as well as managerial skills is very important.

This information gathered from the ASA team was used to assess the quality and competence of the project staff especially, Project Assistants and VRPs.

#### **Key messages communicated:**

As can be seen from the preceding sections, a key feature of the project is based on communicating techniques, skills and knowledge. This is done through training, demonstrations, exposure visits and one-on-one mentoring. However, the underlying process for all these is communication. In order to test, how well the process of communication was working, ASA staff was asked to prepare a list of key messages that they were seeking to communicate consistently. Some of the key messages were:

#### **SRI**

- Seed selection by using salt solution. Using an egg to determine whether the density of the salt solution was sufficient to test seed
- Seed treatment with Bavistin
- Early transplantation at seedling age of 8-14 days and sowing only 1 seedling/hill to achieve more tillering
- Line sowing at 10cm distance from hill to hill and making a drain after every 20ft
- Using **seed** instead of **grain** (seed replacement)

#### **SWI**

- Using seed instead of grain (seed replacement)
- Seed treatment with Panchgavya and line sowing & use of Cono weeders

#### **Mung PVSP**

- Seed treatment with Rhizobium & use of seed instead of grain

### 3.3 Selection of villages for field-assessment

The following villages were selected based on a discussion with ASA Team Leader and Project Executive:

Sl. No.	Name of Village	Name of Block	Name of VRP	Name of PA
1	Damgara	Dhamdaha	Vikram Kumar	Parimal
2	Vishanpur	Dhamdaha	Vibha Devi	Parimal
3	Gangeli	Banmanki	Banku Kr.sharma	Pramod Kr.
4	Harimudi	Banmanki	Upendra Pandit	Pramod Kr.
5	Chakkipar	Khagariya Sadar	Anil Kr.Yadav	Rajneesh
6	Simra	Khagariya Sadar	Salita Devi	Rajnessh
7	Bhutia	Dhamdaha	Laleshwar Yadav	Ramprakash
8	Amari	Dhamdaha	Pritesh Kumar	Ramprakash

A total of 8 villages out of the 31 being covered by ASA were selected. The selection of the village was made such that the areas of all the Project Assistants were covered. Further, out of the 17 VRPs currently with ASA, nearly 50% were covered during the survey.

### 3.4 Field visit and discussions

Field-assessment in all the villages comprised of meeting with SHG-farmers that had participated in the field trials (PVSP-wheat/mung, SWI and SRI) followed by a visit to some of the SRI plots. In some villages, meeting was also held with the VO, for example in Harimudi and Amari.

During the field-assessment the following issues were covered in general:

- Are the SHG-farmers familiar with ASA as an organisation and their staff in particular?
- What are the activities that they could recall with respect to ASA's work?
- Are they aware of the PVSP and SWI trials and their results? How important was the trial and what their future plans are in view of the results?
- If they were involved in the trials and found the results significant, could they recall the varieties put on trial? How much detail could they recall?
- Can they recall some of the new techniques such as seed treatment, seed testing with salt solution? Can they explain the process and why such

treatments are done<sup>2</sup>? This was to establish what was sought to be communicated and what was being understood actually.

- What in their opinion was the role of the VRP and were they familiar with him/her? Similarly, was the VRP familiar with the SHG-farmers?
- What in their opinion was the future role for the VRPs? Would they pay for their services?
- What was their knowledge about the status of the Producer Company? What was their expectation from it in terms of service?

Further, during the visits to the trials plots, visits were also made to some of the SHG members' houses to see how they were stocking the harvest from the PVSP trials. Were the seeds being stored properly? Was the yield from the different varieties mixed up and stored or kept separately? Were they able to identify consistently the varieties by looking at the grain?

In addition, during such visits, the familiarity and rapport of the VRP and PA was easy to assess.

### **3.5 Wrap-up meeting with ASA and BRLPS**

A meeting was held in Purnia with ASA staff and was followed by another meeting in Patna with ASA and BRLPS staff. The meeting was in the nature of a debriefing meeting and broadly covered the impressions being carried from the field assessment. It was more to ensure that the reviewer was not carrying wrong impressions given the short duration of field visit.

### **4.0 Limitations of the review**

The following limitations were faced in conducting the review:

- Most of ASA staff right from the Team Leader to the VRPs were new and had joined within the last 3-4 months. Very few had had participated in the PVSP trials in wheat and SWI.
- Field assessment of yield from the trials could not be carried out since only SRI trials were in the field and impact of SRI was too early to assess in terms of yield. Only the growth and tillering of the seedlings could be assessed.

---

<sup>2</sup> Especially use of egg in testing the strength of salt solution was asked to explained, often with unexpected and hilarious explanations coming from the SHG-farmers

- Therefore, most of the results of the PVSP and SWI trial could only be discussed and verified based on recall made by the SHG-farmers.
- Results for only wheat was available from the PVSP and SWI trials. This formed a basis for tallying with what was recalled during discussions with SHG-farmers. Results from the trials on mung has not been analysed yet, therefore the yield details could not be verified specifically, although, farmers were clear on which varieties performed well.

## 5.0 Findings

As per the ASA-BRLPS agreement, the key tasks for ASA are:

- **Physical outputs:** Yield enhancement through introduction of PVSP and SRI/SWI in 3200 SHG households / farmers.
- **Training and capacity building:** Training and capacity building of SHG-farmers and VRPs
- **Village Resource Persons:** Select, train, deploy and nurture 15 VRPs
- **Producers' Companies:** Setting up 2 Producers' Companies and involve VOs in forming and managing it.

Findings from the review are presented in terms of assessment of performance with respect to the above-mentioned tasks.

### 5.1 Physical outputs

As per the interim report of ASA and based on information provided by ASA staff at Purnia, the following are the physical outputs of the project as at the time of review:

Sl. No.	Activity	Districts	Season	No. of households
1	PVSP on wheat	Purnia & Khagariya	Rabi 2008-09	1400
2	System of Wheat Intensification	Purnia	Rabi 2008-09	142
3	PVSP on mung	Purnia & Khagariya	Summer 2009	1000
4	System of Rice Intensification (under implementation)	Purnia & Khagariya	Kharif 2009	1200
<b>Total households</b>				<b>3742</b>

Thus, as against the target of covering 3200 farmers by the end of the first year of operations, ASA had (including the SRI interventions) covered nearly 3700 households through its trials plots. Of these a majority of were from SHG member households (nearly 98% in the case of PVSP in wheat and SWI<sup>3</sup>).

ASA's activities were carried out in nearly 30 villages spread over the blocks of Dhamdaha and Banmankhi in Purnia district and Khagariya Sadar in Khagariya district.

Under PVSP in wheat seeds of the following varieties were procured and distributed for trial among the participating farmers:

Sl. No.	Variety	Grade	Source
1	UP2526	Breeder	GB Pant University, Pantnagar
2	UP2565	Breeder	GB Pant University, Pantnagar
3	GW273	Breeder	JNKVV, Jabalpur
4	GW366	Breeder	JNKVV, Jabalpur
5	HI1531	Foundation	Manakya Agro, Indore
6	HD2824	Breeder	RAU, Pusa, Samastipur
7	HD2733	Breeder	RAU, Pusa, Samastipur
8	HP1761	Breeder	RAU, Pusa, Samastipur
9	PBW 343	Foundation	UP Seed Development Corporation

Similarly, seeds of the following varieties of mung were procured and distributed among nearly 1036 households:

Sl. No.	Variety	Grade	Source
1	PM-2	Breeder	<b>GB Pant University, Pantnagar</b>
2	PM-4	Breeder	<b>GB Pant University, Pantnagar</b>
3	PM-5	Breeder	<b>GB Pant University, Pantnagar</b>
4	HUM-12	Breeder	<b>BHU, Varanasi</b>
5	HUM-16	Foundation	<b>Bihar Beej Nigam, Begusarai</b>
6	TM-9937	Foundation	<b>Bihar Beej Nigam, Begusarai</b>
7	Neha	Certified	<b>Bihar Beej Nigam, Begusarai</b>

<sup>3</sup> As per ASA's interim report.

**Observations:**

- It is commendable that ASA was able to mobilise nearly 2500 farmers during Rabi and Summer of 2008-09. In fact, carrying out PVSP trials during Rabi 2008-09 with as many as 1500 households is a significant achievement given that the contract between ASA and BRLPS was formalised only in October, 2008 and the Rabi season was almost at hand.

**5.2 Yield performance of trials**

Under the SWI trials nearly 90% of the trial holders reported yield in excess of 40 Qtls/Ha. as against the local varieties yield of 20-25Qtls/Ha. This represents an increase in yield of 100%.

Similarly, under the PVSP on wheat also 87% of trial holders reported yield in the range of 35-50Qtls/Ha. as against the yield of local variety of 20-25Qtls/Ha. Thus, the average incremental yield is 40-100% over yield from local varieties.

The above information was confirmed by SHG-farmers in all the villages that we visited. They reported that yield from local variety was about 1 man/khatta (1 man=40kg). 25 khattas make an acre, thus the yield/acre is about 10Qtls. In terms of Qtls/Ha. it works out to 25Qtls/Ha.

**Observations:**

- Undoubtedly, the introduction of new varieties in wheat based on a participatory selection process has brought about significant increase in yield.
- Similarly, SWI has also brought about significant increases in yield of wheat.

**5.3 Response of SHG-farmers to PVSP in Wheat****5.3.1 Recall of varieties**

This factor was used as a proxy to assess the involvement of the SHG-farmers in the PVSP wheat trials.

Among all the activities of ASA in the project villages, wheat varietal trials under PVSP were the most widely recalled. In almost all the villages, the SHG-farmers could easily recall the names of at least 4-5 varieties that were put on trial.

GW273, UP2565 and UP2526 were the varieties mentioned as the best performing ones in most of the villages, except Simra in Khagariya district, where PB343 was recalled as the best performing variety. Needless to say, this tallied with the results presented by ASA in its interim report, indicating the involvement of the SHG-farmers in the PVSP trials.

### **5.3.2 Recall of the PVSP process**

This factor was used to probe further and assess the extent to which the SHG-farmers had been able to understand and internalise the *process of PVSP* as against merely the trial itself.

Recall of the various steps and factors considered before varieties were selected was sketchy in most of the villages. However, there was a marked difference in the depth and degree of recall in Chakkipar and Simra (both villages in Khagariya district), perhaps indicating the effectiveness of the VRPs and more importantly, the competence of the Project Assistant!

In most of the villages, SHG-farmers could recall the trials (baby trial and mother trial) and the results of the trial. Only a few were able to recall the Focus Group Discussion that led to ranking of the varieties and the factors that went into rating and ranking the varieties.

On probing this further, they mentioned that the FGDs were held with Village Organisations, where only the office bearers of the constituent SHGs were present. This to a certain extent explains why the other members of the SHGs could not recall this process clearly. However, it also raises a question about the communication process from the VO to the SHG.

Only a few members such as Ram Pukari Devi in Chakkipar village, Ratnamala Devi in Damgara and some members in Simra village could recall the initial FGD that was conducted by ASA to ascertain the traits that they sought in an ideal wheat variety.

Almost no one could recall, from where the varieties were sourced. In Simra and Chakkipar, they could recall the various grades of seeds viz., breeder, foundation etc., but even they could not recall the grades of the varieties that were on trial.

Overall, while the trials and the varieties were well recalled, the PVSP process itself is not very well entrenched yet. For example, once the initial FGD is carried out and a set of characteristics identified for a variety that people wish for, the process of searching and sourcing such varieties involves knowledge of sources and the varieties itself. This involves transfer of knowledge as opposed to transfer of skills and techniques as in the case of conducting trials. None of the SHG-farmers could explain how they would source varieties in future in the absence of ASA apart from mentioning the local seed dealer.

### **5.3.3 Response to results of PVSP trials**

Trial holders and non-trial holders are both very excited about the results of the PVSP trials. They are very impressed by the fact that yield has doubled in most cases and the grains of the new varieties are as good as the local grain in taste and colour, if not better.

In fact, during our meeting with the SHG-members, many men folk from the households of the trial-holders would interject to state that the increase in yields were very impressive.

Most of the trial holders reported that they would use some of the harvest from the trials as seed in the coming Rabi. As mentioned earlier, GW273, UP2565 and UP2526 were the varieties that most of the women mentioned as the choice for the coming Rabi.

Many of the women have even set aside some part of the harvest as seed. However, it is not stored properly. Most of it is not properly dried and is stored in polybags and is subject to insect and fungal attack. Only a few such as Bibha Devi in Damgara have dried the seeds and stored them in drums.

Many of the members recalled that the correct way of harvesting for seed purpose was to harvest from the middle of the plot to avoid contamination with other varieties being grown in adjacent plots. However, very few said that they had followed all the precautions. Thus, the seeds being stored now are not free from contamination and further are not being stored properly, rendering them unfit to be called Truthfully Labelled Seeds (TL Seeds).

Apparently, the decision to procure TL seeds from the trial plots was conveyed after many of the holders had already harvested without following any precautions. Further, with none of the VOs actually procuring the seeds, many of the trial holders have lost interest in storing it properly. However, this has not prevented sales of seeds of preferred varieties such as GW273, UP2565 and UP2526 within the community! This is a clear indication of the farming communities response to the PVSP trials results and indicates the latent need that the community had in identifying and sourcing new varieties.

**Observations:**

- The degree and depth of involvement of the trial holders and other members of SHGs in the PVSP field trial in wheat is commendable.
- The widespread recall of the varieties, the results of the trial and recall to some extent of the process by which the results were analysed is an indication of the degree of involvement and internalisation of some aspects of the PVSP process.
- If the intention of carrying out PVSP in wheat is to identify a basket of 3-4 new varieties that have been tested and accepted by the local community by the end of the project, then the current process and ASA's efforts are sufficient.
- On the other hand, if the intention is to leave the community (through the VRPs or some of the VOs) with the knowledge to use the PVSP process themselves, to identify new varieties in the future, even after ASA's withdrawal from the project area, then the current efforts are not sufficient.
- Currently, most of the focus of ASA has been on doing the PVSP process themselves with the community and understandably so. A large part of the process of PVSP that involves knowledge (identification of varieties and sourcing them) was done by ASA themselves and without the direct involvement of the community. Therefore, the community at large is not aware of this aspect of PVSP.
- However, it was heartening to know from the ASA staff that they plan to do more PVSPs and that during this forthcoming PVSPS they would help the community as well as the VRPs understand and carryout the whole process themselves.

## 5.4 Training & Capacity building

### 5.4.1 Training for technology transfer

The core activity of the project is to transfer cropping technology to the community so that their productivity and production is increased leading to a more secure livelihood that is based on agriculture.

Transfer of technology includes transfer of skills, techniques and knowledge. For example, learning how to use a cono weeder is a skill, learning how to carryout seed treatment is a technique while learning how to identify a disease and carryout measures under Integrated Pest Management (IPM) is knowledge. Needless to say, it is easier to transfer skills and techniques as compared to knowledge.

Thus, if this project is about transfer of technology, then training and capacity building are the key means to doing it. Any training has the following components:

- Training targets – for whom the training is intended
- Training content – the skill, technique or knowledge to be conveyed
- Training delivery – how training is provided, through lectures, workshops, actually doing the activity, etc.

### 5.4.2 Training targets & their needs

Training and capacity building in the context of this project has two targets, the community at large and the Village Resource Persons (VRPs), who are expected to serve the community after the end of this project.

Clearly, this means that the training needs of the community and the VRPs are similar as well as slightly different. For example, the VRPs in addition to learning about crop production need also to learn how to communicate effectively, how to organise and manage work such as setting up trial plots. Their personality also needs to be moulded so that they can win the confidence of the community that they are expected to serve.

Currently, the training to both the community (trial holders) and the VRPs is activity oriented and is focused on getting them to complete the activities planned in the project. For example, during the current kharif, SRI is the major activity planned in the project and both trial holders and the VRPs are being taught how to carryout the various steps in SRI such as testing seed quality with salt solution, seed treatment with Bavistin, etc.

**Observations:**

- At present, there is no distinction in the training provided to trial holder and the VRPs
- There is no assessment of training needs of both the targets. For example, no training is being provided to VRPs on communication skills, so vital for them given that they have to conduct meetings regularly.
- Similarly, no training is being provided to VRPs on how to train others, given that VRPs are the ones that train the community and work with them to get the activity completed.

**5.4.3 Training content**

Currently, training is mainly imparting of information and training in skills on a need to know basis that is aimed at getting the activity completed. No formal compilation of training content has been done in the project.

Lack of training modules means that the learning is not structured. While activity based learning is good for learning skills and techniques, not reinforcing it with learning of concepts can lead to unintended consequences.

For example, the first step in SRI is testing of seeds in salt solution. When the salt solution is of the right density, then paddy seeds are poured into it. Those seeds that are hollow or broken will rise to the surface, while the rest will settle at the bottom.

A key question is how to determine if the salt solution has the right density. A simple technique was communicated. Put an egg into a bucket of water, it would sink to the bottom, since it is denser than water.

However, as one keeps adding salt to the water, the density of water begins to rise and a point comes when the egg rises to the surface indicating that the density of the salt solution is greater than that of the egg. This is the point at which the egg is to be taken out and the paddy seeds poured in. Clearly, the egg is used only to determine if the density of the salt solution is correct to carry out the seed test.

This activity was correctly described by almost all the SHG-farmers that we met. However, when asked why the egg was put into the water and then taken out, the responses were varied and hilarious. Most of the SHG-farmers felt that the egg was

put to provide nutrients to the paddy seeds. Many simply could not explain why it was being used, they only said that bhaiya has told us to use it. Some felt that it was to protect the paddy seedling from pests and diseases (seed treatment).

Indeed, in many places, when the SHG-farmers could not explain correctly the reason for using an egg, the VRPs were asked to explain. Many of them also mentioned that eggs were being used for providing nutrients to the seeds. Needless to say, with VRPs being the first point of information to the community at large, communication distortion had taken its origin in them.

Thus, as can be seen in this case, while the activity was completed and the technique correctly learnt, it had not led to development of knowledge of why it should be done in this manner! Further, with VRPs being trained and then being used to train the community, there was communication distortion at the knowledge level while at the skill level the content was conveyed correctly.

Finally, lack of structured learning modules means that all the messages may not get conveyed consistently to all the intended targets. Each trainer may emphasise and convey only that which s/he thinks is important.

**Observations:**

- Training content is completely unstructured and can lead to key messages being missed out
- Training content is more to ensure that the activity is completed rather than to impart knowledge. While activity based learning is good to pick up skills and techniques, not reinforcing it with concept learning can lead to new superstitions!
- With VRPs being used to train others, there is a need to ensure that there is a system to train VRPs on how to train others and also to check what is being communicated to the community to ensure that messages are not distorted.

**5.4.4 Training delivery**

Currently, training is being delivered through a chain of trainers. The key trainer for all technical issues is the Project Executive, who imparts training to Project Assistants, who already have experience in the activities and the crops being taken up. The Project Assistants in turn train the VRPs who in turn train the SHG-farmers. Sometimes, the Project Assistants may themselves train the SHG-farmers.

Indeed, it is our impression that it is the PAs who impart training to the SHG-farmers while the VRPs convey the activity to be carried out and how it is to be done. Given the fact that most of the VRPs are new, this is understandable.

However, given the role to be played by VRPs, not only should VRPs be given training, they should be regularly asked to train the SHG-farmers in the presence of the PAs. This would ensure that VRPs learn how to train other and how to conduct a training session. In addition, it would also increase their stature in the community and enhance their personality.

**Observations:**

- Given that a chain of trainers are being used to deliver the content, one should be on guard against messages being distorted.
- The best way to combat this is to standardise the content and closely monitor the delivery of the training at each point of delivery.
- Further, for VRPs to be used as trainers, the content of their training should also cover communication skills, how to conduct trainings and meetings, etc.
- This aspect becomes more important when the project would target 35-45000 households in the coming two years. The role of VRPs as trainers would be vital in ensuring outreach to such a large no. of households.

**5.4.5 Training & capacity building – overall observations**

- Overall, given the short time, the ASA team has successfully managed to transfer a lot of skills in crop production, varietal selection and trials.
- However, it has fallen short in transferring accurately concepts and knowledge.
- Training has been used mainly to ensure completion of activities planned in the project rather than building the capacity of the community and the VRPs.
- While activity based learning is good, it should be backed by concept learning also to avoid creating new superstitions that stem from wrong understanding of the reasons for carrying out an activity.
- Lack of training needs assessment has led to no attention being paid to the personality and communication skills development of VRPs.
- Lack of standard training modules and long chains of training delivery has led to communication distortion at concept level. This has serious implications for

the forthcoming scale-up phase, when VRPs would be used more and more to communicate with and train the community.

## 5.5 Village Resource Persons

As mentioned in the preceding sections, VRPs are the key links between the community and the ASA project staff. They are the first point of contact for the community and are expected to remain and serve them after ASA withdraws. They are the crucial human resources to carryout technology transfer during the scale-up phase. Therefore, the quality and commitment of the VRPs is crucial to the success of the project during its duration as well as beyond it.

Accordingly, the selection, training, nurturing and monitoring of the VRPs is a crucial activity under the project.

### 5.5.1 Selection of VRPs

The criteria for selection of VRPs as listed out by ASA team at Purnia are as follows:

- Resident of concerned village
- Should have formal education upto class 10/12
- His/her candidature should have the approval of the VO
- Should have a record of participation in social/development activities in the village
- Priority is given to youth (between 20-30 years of age)
- Should be from a family which has at least one member in an SHG

Currently, however, the process of selection of a VRP is largely informal and is often based on word of mouth. In the absence of VOs and in many cases where the VOs are new, the acceptance of the candidate by the SHG members is sought before a VRP is selected.

Indeed, till recently, a large no. of VRPs were from one village namely, Amari, which led to some managerial problems. At the time of this review, a number of them had been replaced or had left and new VRPs were in place.

Apart from the acceptance by the SHGs, no other formal assessment of the capabilities of the candidates is carried out before they are selected. Given that they have to train others and need to communicate well, even these aspects are not being adequately assessed as is seen from the abilities of some of the VRPs selected.

Finally, no clarity exists as to the future role of VRPs. It is our distinct impression that even the better among the VRPs would not have much to offer to the community based on their current levels of knowledge and activity profile. As a consequence, we are not sure that the VOs would be ready to hire them after the project duration.

**Observations:**

- Selection of VRPs is based on an informal process
- No assessment of the candidates' ability to communicate orally and in writing is being carried out. Neither are his /her simple arithmetical skills being tested. Given that many of the activities of a VRP would require measurements and ability to calculate, this is a vital skill.
- Given that no clarity on his/her future role exists, the selection process and criteria is geared more towards meeting today's requirement of getting activities completed as per the project plan. This can have a serious impact on the quality of the VRPs and their employability by the VOs in the future.

**5.5.2 Training of VRPs**

This aspect has been dealt with in detail in the preceding section on training. VRPs need to be trained to carryout multiple roles that need multiple skills and knowledge. They need the ability to communicate well and organise and manage activities. At the same time they need knowledge on crop production, pest management and nutrient management. Future roles may need them to source inputs on behalf of the farmers and find markets for their outputs.

Clearly, VRPs would need technical skills and knowledge as well we managerial skills and knowledge. Current training content is geared only towards imparting technical skills training to the VRPs completely ignore the communication and personality development aspects.

**Observations:**

- Even on current expectations from the VRPs, the training content is inadequate.
- For example, one of the most frequent areas for advise sought by farmers is pest and disease control. Current training does not equip them to adequately address this issue. Most often for this they have to fall back on PAs or even the Project Executive himself.

- While, this issue is being addressed by bringing it to the notice of the PA or the PE, it may not be possible once the outreach is scaled-up and certainly not so when ASA withdraws from the project.
- It may be better to train the VRPs thoroughly in all aspects of crop production for a select few crops that are economically most important so that they become experts in it. This needs a carefully planned training module that is based on class room learning as well follows the Farmer Field School approach.

### **5.5.3 Management of VRPs**

Currently, no formal system for evaluating the performance of a VRP exists in the ASA project. Assessment of the performance of a VRP is based on personal knowledge of the concerned PA, the PE and the Team Leader.

Target setting is based on the activity at hand and is not planned out in advance, nor is it monitored on a regular basis. Mentoring of VRPs, a key aspect to develop his/her personality is largely informal and not a requirement of the system.

No system has been put in place to assess the training needs of a VRP based on his performance and abilities. Indeed, VRPs are being developed and used more as field assistants to carryout the project activities rather than being developed as service providers for the future.

#### **Observation:**

- There is a great urgency to implement a regular and formal process for assessing the performance of VRPs<sup>4</sup>.
- This should start with a clear definition of role, both today's and tomorrow's.
- Regular meetings (at least monthly) should be held with all the VRPs to assess progress, problems, training needs and also conduct training. The Team Leader should attend these meetings.
- At the field level, the PE and the concerned PA should review the performance of the VRPs on a one-on-one basis weekly.
- In addition, the PE should attend a few of the training sessions being conducted by the VRPs to assess fidelity in delivering content as well as the quality of communication.

---

<sup>4</sup> Indeed, ASA may like to borrow from its own processes that it uses to evaluate performance of its staff

#### **5.5.4 Quality of VRPs**

As described in the preceding sections, given the VRP selection, training and management processes adopted in the project, the ability of the VRPs in getting the allotted activity done by the SHG-farmers is adequate. However, the quality of the work is not always uniform. For example, during our visit to Bhutia village we noticed that spacing in an SRI plot was more than double the recommendation. Similarly, as mentioned earlier, there was distortion in communication.

The VRPs as they are now are adequate as field workers, but cannot work with the community independently. They are not in a position to conduct training on concepts and in a few cases even in ensuring that the activity is demonstrated properly.

#### **Observations:**

- There is an urgent need to review the quality and performance of VRPs and weed out those that do not make the grade. It is better to do this now rather than when the project is about to come to an end.
- With the skills, knowledge and capabilities that VRPs have now, it is our opinion that the community at large may not be interested in paying to receive guidance from them in the future.

### **5.6 ASA's interventions & Village Organisation**

ASA is expected to work with and through the Village Organisations. They are not expected to work directly with the SHGs. However, at the time of starting its work in October 2008, very few VOs had been formed and therefore, ASA worked with SHGs (mainly through its office bearers).

It is pertinent to mention here that ASA is not responsible for either forming or nurturing the VOs. However, it is responsible for building their capacity in managing procurement and distribution of inputs on behalf of the constituent SHGs. Also VOs are eventually expected to carry out the PVSP process in selecting varieties in future. Therefore, their understanding and internalising of the process is important.

#### **5.6.1 VO as procurement agency**

Every VO is expected to set up a Purchase Committee to purchase inputs on behalf of the SHG members. However, as at the time of our review, these committees were

not yet activated. In fact, during the current kharif season also procurement of seeds of SRI was done by ASA.

However, in almost all villages that we visited, even in places where the VO had just been formed, members reported procurement of inputs and purchase of TL seeds from the members as a key service expected from the VO with support from the VRPs.

As clarified by ASA, since the decision to procure TL seeds was made after the wheat trials were already harvested, VOs could not procure them. Further, since VOs did not have funds to procure, no action could be initiated in this regard. However, the ASA team plans to gear up the VOs for procuring TL seeds from the next crop.

#### **5.6.2 VO as monitoring agency**

Every VO has to set up a monitoring committee that would supervise and monitor activities being carried out in its area under the BRLPS project. Many of the VOs did not know if they had set up such a committee. In places where they could recall, the committees had not involved themselves in monitoring the activities being carried out under this project.

#### **5.6.3 VO & PVSP process**

As mentioned in the preceding sections, the focus group discussion following the harvest of the PVSP wheat crop was carried out with VOs (where there were no VOs with the office bearers of the constituent SHGs). However, while some of the participants were able to recall the process, it is our impression that they would not be able to replicate the entire PVSP process all by themselves.

#### **5.6.4 VO & its role in future**

The clear expectation from the VO in the future is for it to act as an agent to procure and distribute inputs to its members at a rate that is cheaper than the market price and better in terms of quality. VOs are expected to work through the Producers' Company being set up. Apart from this, despite repeated probing and querying, members were unable to come up with any more activities for the VOs.

#### **5.6.5 VOs hiring VRPS**

This issue was discussed in every village and the response was uniform. They expected VRPs to act as procurement and distribution agents and on behalf of the Producers' Company. Not even a single SHG member mentioned that they expected

VRPs to provide technical support in crop production or in marketing their produce. After repeated querying some mentioned that they would pay for VRPs to act as procurement and distribution agents. In most cases, it was clear that not much thought had gone into the future role and compensation pattern for VRPs. This is an issue that needs to be thought through carefully and training and mentoring of VRPs carried out accordingly.

#### **5.6.6 Overall observations on VOs**

- Most of the VOs are just a few months old, barring the one at Amari which is perhaps a little older.
- The procurement and the monitoring committee are yet to be activated in most of the VOs, especially vis-à-vis the activities under this project.
- Expectations from the VO are only to act as an agent to procure and distribute inputs. There is hardly any other need expressed. This indicates that more thought needs to go into the future role of VOs. This is the responsibility of both ASA as well BRLPS staff and must be done jointly with the VOs themselves.
- Given that the VOs are just a few months old, it seems a little premature to expect them to perform on all these fronts. However, ASA needs to put in place a set of training modules and involve VOs more actively in its activities. For example, it can begin by involving the procurement committee in preparing a list of varieties and quantities that need to be procured for the forthcoming Rabi season. Since PVSP has already been concluded in wheat, members are familiar with the varieties that they wish to sow, it should be relatively easier for the VO to prepare such a list.
- VRPs may be entrusted with the task of supervising this activity. ASA can help the procurement committees of the respective VOs, place an indent with ASA, which can source the seeds, while the VOs may be asked to make the payment and organise the distribution as per the list.
- Overall, it is our opinion that VOs have some distance to go before they can be expected to perform these activities under their own initiatives.

### **5.7 Producers' Company formation & role**

As in the case of the VOs, there is good awareness about the imminent formation of a Producers' Company, but there is hardly any clear information among the VOs or even the SHGs on the status of its formation.

There is even lesser clarity on whether it could be sustainable with just acting as a procurement and distribution agency that sells at a price lower than the market price. Not even a single member mentioned that the Producers' Company could act as a marketing agent on behalf of its members. Nor was pest and disease management advise mentioned as a potential service. Nor was guidance in future for selection of varieties through a PVSP process mentioned as potential services to the members.

**Observations:**

- While there is great excitement about forming ones own company, it is not backed as of now by hard business planning.
- It is our suggestion that ASA (since it is a pioneer in setting up and running Producers' Company elsewhere) should be asked to prepare a detailed project report (DPR) on the setting up of a producers' company.
- The DPR should be reviewed jointly by BRLPS staff and the various VOs in a series of small meeting where the DPR should be explained. The VOs should be asked to deliberate among themselves on the contents of the DPR. Based on the feedback received in these meetings the DPR should be modified / finalised.
- This document would then become the basic business plan for the proposed Producers' Company. Such a document would also help clarify the future roles of the VRPs and the VOs . This in turn would help in deciding how to select the VRPs and what to train them in.

**6.0 Suggestions**

Clearly this project is about transfer of technology and building mechanisms to institutionalise the process of transfer of technology for the future. In that sense, this project aims to build capacities in local institutions to identify and transfer technologies that would enhance productivity and make agriculture more profitable as a livelihood.

Based on the findings and observations detailed in the preceding sections here are a few suggestions:

- Quality of manpower is of utmost importance in a project where the core activity is transfer of skills, techniques and knowledge, leading to transfer of technology.

- Amongst the various human resources in this project, the quality of VRPs and PAs is of utmost importance. Both these need to be improved in this project.
- Training is the key means to bringing about transfer of technology. This aspect of the project needs to be strengthened considerably. Training needs to be carried out in a more systematic manner. It should be based on set of clearly identified training needs for each set of target segments. Standard training modules must be prepared to ensure that quality of training is uniform and consistent.
- Further, given that the project would scale-up in its outreach, the quality of manpower and its training is of primary importance. ASA needs to put together a coherent plan on how it plans to achieve this in the next 2 years.
- VRPs are key human resources in the project now and also after ASA withdraws. ASA needs to clearly identify their future role and help prepare them for it now.
- ASA also needs to put in place a formal mechanism to monitor and assess the performance of VRPs on a regular basis.
- Finally, ASA needs to prepare a well thought out business plan for the proposed Producers' Company. The current set of expectations from the Producers' Company may not be sufficient to keep it afloat financially.

In conclusion, we would like to record that the achievements of ASA in about a year's operation in this project is commendable. It has mobilised a large number of households to participate in its activities and has established a set of techniques to enhance yield by 100% in wheat.

Clearly, ASA has performed well in delivering on the physical outputs. Now they must begin to deliver on the softer issues of building capacities for the future!

## 7.0 Annexe 1 ToR for this review

Action For Social Advancement (ASA)  
(A Non Government Development Organisation)



1.0 Action for  
2.0 Social  
3.0 Advancement

Ensuring livelihoods with equity and dignity

### Terms of Reference for performance review of :

**Agriculture Support Services to the Bihar Rural Livelihood Promotion Society by ASA on “Participatory Varietal Selection and Promotion (PVSP) Programme & PVSP - a complement to System of Rice Intensification (SRI)”**

#### 1. Background of the Project:

ASA has been contracted by the BRLPS to provide agriculture support services on the promotion of participatory varietal selection process and SRI in the project villages of Purnea and Khagaria districts of Bihar.

The project is for three years (October 2008 – September 2011). The first year of the project started from October 2008.

The project aims to introduce and propagate specific agriculture technologies for the enhancement of agriculture productivity. In particular it three specific components:

- Participatory Varietal Selection and Promotion
- System of Rice Intensification and System of Wheat Intensification in integration with PVSP varieties
- Facilitate BRLPS to organize farmers’ producers company

A. The project districts are Purnea and Khagaria and the specific blocks are : In Purnia Dhamdaha, Banmankhi & in Khagaria it is Khagaria Sadar.

B. Some basic problems of agriculture in these districts are :

- availability of land per household is very low (0.38-0.49 ha), which results in ensuring the food sufficiency for just 3 to 5 months
  - although the land is very fertile with availability of irrigation facility, the cropping intensity is low (1.39-1.58)
  - the paddy productivity is also very low (0.97-1.72 tons per ha), which again is a major area of concern.
  - More importantly, 92-94 percent of the population is rural and a majority is dependent on agriculture and agriculture labour for livelihood.
  - Farmers are small and unorganized
- a. ASA started its association with the BRLPS through a pilot intervention of PVSP during summer 2008 for Moong crop in Purnea, Nalanda and Muzappharpur districts. Based on the success of the pilot initiative the BRLPS had asked ASA to undertake the present assignment in a relatively large scale.
- b. The point to be noted that BRLPS has a full fledged staff structure in the referred districts and blocks to carry out the mobilization of SHG members / members households for the intervention in the agriculture support services & its associated works. ASA works as a technical service provider in the project villages in association with the Village Organizations (federation of SHGs at the village level), BRLPS staff with clear target for output. ASA has its own field staff to carry out the assignment on the ground.

## 2. Scope of work

- i. 2 districts & 3200 households ( at least 70% SHG members organized by the BRLPS)
- ii. During October 2008 – March 2009 ASA has carried out PVSP trial in 25 villages across 2 blocks of two districts for wheat crop.
- iii. In summer (April-June 2009) ASA has covered 31 villages across 3 project blocks in 2 districts for Moong crop
- iv. Regarding the FPC activity ASA has initiated the process with awareness building workshops with the BRLPS staff in both the districts. The process of membership mobilization and incorporation & benefits of FPC in various village level trainings.

- v. Besides ASA has set up office in Purnea and deployed personnel adequately to implement the project.

### **3. Objectives and tasks to be carried out by the Consultant for the proposed study:**

The consultant is expected to carry out the following task:

- v. Assessment of the progress & achievement of the activities undertaken by 'ASA' during first year of implementation against the tasks identified in the agreement with 'BRLPS'
- vi. Assessment of the performance of the project against the output indicators mentioned in the agreement between 'ASA' & 'BRLP'
- vii. Assessment of the responses and the emerging indications against the overall output of the project (Finally which would be achieved only after third year) during the first year of implementation of the project.
- viii. Make recommendations for improvement

#### **Mobilization of Farmers :**

- Extent of Coverage in all the villages for trial & its output and also its impact in other SHG members / Non-SHG members
- Impact on future multiplication of the preferred varieties comes through the Focussed Group Discussions (FGDs)
- Mobilization of local resources such as Village Resource Persons in terms of uniform distribution in all the villages
- Impact of the uniform or non uniform distribution of VRPs across villages in terms of inputs (seed, training, exposure & other agricultural inputs) & outputs (selected preferred varieties by the farmers)

#### **Training & Capacity Building :**

- Assess the impact of training & capacity building programme organized for the Village Resource Persons and its transfer of knowledge to the SHG members / farmers and also its percentage of communication distortion
- Assess the training module designed for the Village Resource Persons and its impact on the programme in the field

- Assess the quality of Village Resource Persons, which has been imparted training and exposure on various stages of PVSP-SWI-SRI and its impact on implementation
- Assess the ownership & command developed by the Village Resource Persons, while the project is in the stage of multiplication of seed preferred by the SHG members / farmers
- Assess the quality of Village Resource Persons in terms of field visit, organized field days and does the raised concern of the SHG members / farmers on the field days has been incorporated in the design of the programme to suit the local conditions

#### **Role of Village Organization :**

- Assess the quality of capacity building programme organized in terms of seed & other agricultural input distribution programme & its impact towards the future role clarity & ownership development of the VO for procurement & distribution of agricultural inputs in the subsequent years
- Assess the current status in the capacity of the Village Organizations in terms of procurement of TL seed for multiplication from the trial holders through a Procurement Committee, while expanding to more number of villages, where the project has promoted SHGs and also select few more villages for trials in same or some new crops in order to expand to more villages in the subsequent years (3<sup>rd</sup> year onwards)
- Assess the understanding of the Village Organizations for the selection of Preferred varieties of seed through the Focused Group Discussions
- Assess the capacity of the Village Organizations in managing Village Resource Persons and adapt a service charge model (Service Charge : VRP honorarium will be paid based on the number of farmers receiving services from a particular VRP)

#### **Village Resource Persons :**

- Assess the process followed for identification of Village Resource Persons & their nurturing for providing services to the SHG households on a sustainable basis in long run
- Assess the quality of the Village Resource Persons with regard to providing quality services to the poor SHG members (sensitize towards poor & poverty)
- Assess the system installed for the management of Village Resource Persons in the programme & their performance management

### **Impact of Agriculture Support Services such as PVSP, PVSP as a complement to SRI**

- Assess the yield difference measured through the scientific assessment and the perception of the poor SHG households
- Assess the impact of the programmes in terms of adoption of preferred varieties of seed in a larger agriculture field (such as trial undertaken in 300 square meter of land, do the farmer will scale up to 1500 square meter of land or in all the agricultural field which the farmer possess)
- Assess the TL seed stored by the SHG members in the individual level and the farmers' seed storage quality. Assess the total quantity of preferred variety of seed stored by the farmer and how many acres of land it can expand in both the district & how many SHG households it can cover in the 2<sup>nd</sup> year.
- Assess the processes followed for the formation of Women Farmers' Producers' Company (WFPC) and the perception of the SHG members for the WFPC in future. What are the processes required and also to be followed at the level of BRLPS, ASA and the Community.

#### **4. Approach of the study**

- i. Review of the documents as necessary
- ii. Field visit for gathering of first hand information and verification of results
- iii. Meeting with the officials of ASA and BRLPS for inputs and feedback

## 8.0 Annexe 2: ASA-BRLPS Agreement

### TERMS OF REFERENCE

For

**Agriculture Support Services to scale up Participatory Varietals Selection and promotion (PVSP)  
and System of Rice Intensification (SRI)**

#### **Back Ground of the project**

Bihar Government has taken the initiatives to prepare a Bihar Rural Livelihood Project. Bihar Government is preparing the project through Bihar Rural Livelihood Promotion Society (BRLPS) with the financial assistance from the World Bank. BRLPS is an independent society of Government of Bihar. This will be a five year project in the six selected District of Bihar namely Mujaffarpur, Madhubani, Gaya, Nalanda, Khagariya, and Purnia. The purpose of this project is basically to improve the social as well as economic condition of rural poor community by impacting their livelihoods. This is to provide an opportunity to the rural poor and disadvantaged community to improve their own socioeconomic condition and hence a better quality of life. The focus of this project is to enable them to become part of the main stream development by building and strengthening the community institutions at the grass root level. Building institution at the grass root level will not only provide a platform to these poor communities to raise their demand but it will also help them to be part of wider network of such democratic institutions. This wide network will enable them to understand themselves, resources and its uses so that they can play the role of a self planner/guide for their own development plan. This BRLPS project will also focus on empowering the women through its capacity building to access the basic services and entitlements.

#### **Agriculture Support Services : Participatory Varietal Selection & Promotion (PVSP) programme; a complement to System of Rice Intensification (SRI)**

Agriculture contributes merely 40 percent of Bihar's domestic product but about 80 percent of Bihar's workforce is employed in this sector. Needless to say that Bihar is largely an agrarian economy and severely suffers from poor agriculture productivity. Productivity is low with an average return of Rs 4500 per hectare in rainfed conditions with food security of 3 to 5 months from own lands. Small and marginal farmers constitute about 70% of poor families with average landholding size of less than 50 decimals with often no irrigation facility. In BRLP project areas it is estimated that about 30-35% of the households are with land and about 10% are sharecroppers. Further, a large proportion of Schedule Caste families are landless;

depending heavily on sharecropping or wage earning in various unorganized sectors such as farming, brick kiln, stone quarrying etc. A large majority of them migrate to different parts of the country in search of casual employment. Except for a minority the agriculture is limited to single crop dominated by cereals and pulses.

There are many challenges in the agriculture sector of Bihar. Generally, the agriculture extension infrastructure is very poor. Even in district towns it is difficult to find well stocked seeds and fertilizer stores. The seed replacement rate is less than 3%. The available seeds are of poor quality and the existing varieties are over 15-20 years old. The prevalence of fake seeds is rampant. With the government extension machinery almost non-existing, farmers have no access to knowledge and problem-solving services. Lack of availability of institutional credit for agriculture and poorly developed water and land resources also contribute negatively for the low productivity of agriculture.

On the other hand Bihar offers a huge opportunity for agriculture prospect. With its fertile land and ample water resources things can be made much better than what it is currently. Concerted efforts towards intensification and diversification of agriculture through the delivery of effective extension services for changing of varieties, inputs supply, farm knowledge services, diversifying into new crops, development of irrigation infrastructure, and backward and forward linkage with the market can add significant value for productivity enhancement in one hand and creation of new jobs in the farm sector on the other.

In the backdrop of the above this proposal aims (a) to develop a community based agriculture support services with special focus on introduction and promotion of improved crop varieties through following the participatory selection and adoption protocol, popularly known as Participatory Varietals Selection and Promotion (PVSP), (b) Productivity enhancement through System of Rice Intensification (SRI). In Jeevika, System of Rice Intensification has been tested successfully and achieved substantial increase in yield by 2-3 times. Needless to emphasize that, change in seed will increase the yield by 10-15%. Considering the above learning and experience, the project plans to implement PVSP as a complement to System of Rice Intensification (SRI) during Kharif season. Secondly, to implement Participatory Varietal Selection & Promotion (PVSP) Programme during Winter & Summer season in the project villages of two districts Viz. Purnea & Khagaria.

### **Responsibility of BRLPS**

The project will form and nurture SHGs in these districts in the five years are as follows;

<b>Years (Oct-Sept)</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>
Nos. of SHGs	1860	2460	2880	2100	700
SRI-PVSP Intervention (SHG & Non-SHG Members)		1200			
PVSP Intervention (SHG & Non-SHG Members)		2000			

### **Tasks to be carried out for the Agency :**

The following tasks and the time line have been described under the proposed assignment on pilot project in Participatory Varietal Selection & Promotion (PVSP) programme.

1. Providing Human Resources
2. Identification of around 3200 SHG households / farmers to implement SRI-PVSP & PVSP
3. Identify the Skilled Extension Workers / Village Resource Persons
4. Purchase of agricultural equipments such as weeder, sprayer, seed, fertilizer, pesticides, etc and distribution of the same among the participating poor SHG Households / farmers through the Village Organizations & SHGs (where there is no village organizations)
5. Introduction of SRI & PVSP and sustain the practice with 3200 SHG Households / farmers
6. Orientation, Training and Exposure of SHG households / farmers
7. Conduct workshop & developing promotion materials for dissemination
8. Organize the participating SHG Households / farmers into producers' company
9. Quarterly reporting
10. Yield measurement / validation by Government scientist or senior technical officers / External Agency

Sl. No	Activity	One Year Plan											
		Oct	Nov	Dec	Jan	Feb	Mar	Apl	May	June	Jul	Aug	Sept
1	Identification of beneficiaries for exposure	Y	Y					Y	Y				
2	Exposure visit outside of Purnea and Khagaria		Y							Y			
3	Training of beneficiaries		Y							Y			
4	SRI trial		Y	Y						Y	Y		
5	PVSP trial		Y	Y		Y	Y			Y	Y		
6	Exposure for dissemination			Y			Y					Y	Y
7	Grooming of VRPs	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
8	Registration of producers' Company					Y							
9	Activity by PC									Y			
10	Training of VRPs	Y		Y							Y		
11	Seed distribution programme												
12	Inception Report			Y									
13	Progress Monitoring				Y				Y				Y
14	Impact Assessment											Y	
15	Base Line			Y									
16	Staff posting	Y											

### Outputs to be delivered

- I. An overall increase in agriculture productivity by about 30 % in the area by the end of the project.
- II. Yield increment of paddy up to 200 to 300 per cent over local varieties in SRI
- III. Farmers and their institution's capacity built for linking with the line departments including Krishi Vigyan Kendra (KVK), State Agriculture University (SAU) and other service providers for agriculture production and marketing related issues.
- IV. Increased seed replacement rate by about 5-7%, varietal diversification index by 80-100% at the end of the project. (In case of a single crop with 2 existing variety; 2-3 more varieties for the same crop will be added)
- V. General awareness among farmers about technologies improved and the technology adoption rate increased.
- VI. The trend of customization of agriculture technologies as per local conditions increased due to strong participatory methods applied for the validation of the technologies.

- VII. Creating a pool of 15 Local Resource Persons
- VIII. Two (2) nos. of Producers' Company will be formed & registered

### OUTPUT Indicators

OUTPUTS	After 1 Year
Household Covered	3200 HHs
Minimum 70% SHG Households will be covered	2240 SHG HHs
Incremental yield (Minimum 1.25 MT in 0.5 acres of land)	1500 MT
Village Resource Persons developed (in Numbers)	15
Amount Budgeted	Rs. 40,90,800.00

Based on the above indicators, the performance of the TSP in scaling up of System of Rice Intensification (SRI) with addition to Participatory Varietal Selection & Promotion (PVSP) and Participatory Varietal Selection & Promotion (PVSP) in isolation will be assessed by an external agency at the year end. Depending on the performance of the TSP at the year end, this programme may be extended for subsequent two years.

## 9.0 Annexe 3: PVSP & SRI – A brief note

### ***Participatory Varietal Selection and Promotion (PVSP) as a methodology***

Seeds of improved varieties of crop can increase the production levels significantly. The adoption of new varieties is still not a common practice among farmers, especially in resource poor areas which is dominated by small and marginal farmers. The number of new varieties grown is small and the most used varieties are mostly local, occupy sometimes nearly hundred percent of the area. Widely grown old varieties (age of these varieties is over 15-20 years) are not only low yielding, but also vulnerable to pests and diseases due to improper preservation, mono culture and because of decay in genetic purity over the years. The adoption of new varieties is low due to several limitations in our agriculture research and extension system including : (a) farmer is seldom involved in the research process for developing varieties, (b) the formal research system aims at selecting a few widely adaptable varieties, therefore differences in physical and socio-economic environment within areas are not considered, and (c) the research and extension agencies dictate the uniform and generic recommendations for adoption which do not always suit to all categories of the farmers because agro-ecology, input use and management practices generally followed by the farmers especially small and marginal farmers are different. The implications of these limitations are found in poor adoption rate of varieties. For instance, ICAR has over 500 new rice varieties but hardly 20-25% of them are in general cultivation on a sizeable area. The gross annual losses due to unavailability of the potential variety are huge. Most importantly, the farmers, especially the farmers of resource poor areas have been eluded with their rights of choice of seeds and technologies which suit their condition.

To overcome these shortcomings several researchers and development agencies world wide initiated the Participatory Varietal Selection and Promotion methodology. PVSP is - a method intended to understand the felt and perceived needs of the farmers for suitable crop varieties and allow them to test, identify, and adopt/spread the suitable "farmer preferred" varieties from a "basket of choices" provided to them. Steps followed in PVSP are:

- (a) *Identification of farmers' preference:* in PVSP an understanding is developed about the qualities or attributes on which farmers prefer a particular variety which is under cultivation in the area for a long time and popular. This variety or varieties are called the local check. There must be some preferred traits (viz. high yield, better taste, short maturity, drought resistance, etc.) because of which the variety is preferred over others. Participatory methodologies are applied to get this information from the farmers/villagers.

- (b) *Search process for varieties:* based on this understanding a search process is carried out to identify varieties within the released and pre-released varieties of the Research institutions all over the country, which have attributes matching or closely matching with the farmers' preferred traits that were identified at the first stage. This process ends with the procurement of seeds in smaller quantities of those varieties which have attributes closer to what farmers are looking for. These varieties are called the introductory varieties.
- (c) *Trial in farmers' field:* the seeds of these varieties are then tested in the farmers' field in a very small quantity alongside their local check in the same field and under same management practices. No additional inputs are recommended for the introductory varieties. Typically in a village 3-4 variety of a crop is tested with at least 4-6 replications for each variety. Simultaneously with one farmer per village all introductory varieties are tested in one field to compare the relative performance of each variety under same inputs and management practices.
- (d) *Evaluation by farmers:* during the cropping season and post harvest the focussed group discussions are conducted with the participating and observant farmers to evaluate the performance of the introductory varieties vis-à-vis the popular local check. Through this process the preferred varieties are screened by the farmers themselves. A scientific data base is also developed about the performance of the varieties on parameters commonly used for the varietal performance assessment.
- (e) *Dissemination of preferred varieties:* The varieties are identified as preferred through this process, the seeds of which are multiplied locally through proper seed production process and disseminated within the area.

The benefits of involving farmers in identifying appropriate varieties are significant in terms of : (i) yield increment up to 30-40% by adopting new varieties against local variety, (ii) reduction in cost of components like fertilizer, irrigation, pesticides, (iii) increasing varietal diversity in the area, and finally (iv) the increased awareness among the farmers, about the newly found varieties empowering them to demand for more such technologies.

The PVSP and then followed by multiplication (seed production and spread) of the farmers' preferred varieties will be the main engine in enhancing the crop productivity in the area. There is a huge pool of varieties available for rice, pulses and oilseeds in India and therefore identifying few popular varieties through farmers' selection and their subsequent adoption will not be very difficult within the time span of 3-4 years.

**What is SRI ?**

Fr. Henri de Laulanie, S.J, first developed SRI methodology in Madagascar in the 1980s. Systems for rice intensification or SRI is a methodology rather than a technology, in which the management of soil, water, plant and nutrients is altered for greater root growth and nurturing microbial diversity resulting in healthier soil and plant conditions.

In SRI, practices like seed rate, method of raising of seedlings in nursery, transplantation, control of water in the main field, weeding/hoeing are modified to ensure higher ratios of tillers to mother seedling, increased number of effective tillers / hill, enhanced panicle length and bolder grains, or in short enhanced yield of paddy.

**The Methodology of SRI:**

- **Seed Selection and treatment:** Farmers need to start with a fresh stock. The seeds are dipped in brine water in order to sort out the bold grains that settled down. Seed treatment with fungicide is mandatory.
- **Wet Bed Nursery:** For SRI wet bed nursery in lowland is recommended.
- **Transplantation:** During transplantation, uprooting of tender (9-15 days old) seedlings is to be done without disturbing the roots. The earth, immediately surrounding the root region, is scooped from the nursery bed along with the roots to prevent any damage at the root region. The seedlings with the earth ball are then transplanted in the main fields. Only one seedling is used per hill.
- **Spacing:** Wider spacing of 1 ft Row-to-Row and 1 ft. Plant-to-plant are given to allow profuse tillering in latter stages.
- **Regulating water depth as much as possible:** Alternate drying and wetting gives best results in SRI. However, in cases where water regulation is not possible, there it is important to retain thin film of water in the field during the growth stages of SRI paddy.
- **Weeding and hoeing:** Hoeing and weeding is recommended for 2- 3 times during the growth phases of paddy.

In short, the practice of SRI in comparison with the traditional practice may be depicted as below:

SRI	Particulars	Traditional
5 Kg/ha	Seed rate	50- 60 Kg /ha
8-14 days	Age of seedling	21-35 days
800 sq ft / Ha.	Nursery area	10750 sq ft / Ha.
6 MT / ha.	Yield	2 MT / ha.

### **Why PVSP with SRI?**

SRI talks about change in package of practices of paddy cultivation & PVSP talks about varietal selection in a participatory manner as per farmers' preferences. So, integration of both will make significant change in the productivity.

In both the cases the intervention is aiming towards productivity enhancement as well as reducing the risk factor associated with production system. In one side we are trying to promote varieties suitable under the local micro climatic situation through PVSP & in other side trying to incorporate the next level of intervention with PVSP particularly with paddy is changing the practice. This PVSP along with SRI will help us to identify varieties with different qualities e.g .varieties suitable under waterlogged situation, varieties with different maturity time suitable for different land type, different water requirements etc.