One Student–One Farmer–One Solution

under RAWE

Transforming Rural Agricultural Work Experience (RAWE) from Exposure-Based Learning to Problem-Solving Experiential Learning

Bihar Agricultural University

Sabour (Bhagalpur)

www.bausabour.ac.in

"One Student–One Farmer–One Solution" under RAWE

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"One Student–One Farmer–One Solution" under RAWE

Reimagining RAWE as a problem-solving experiential learning model

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Concept: One Student + One Farmer + One Problem + One Solution + One Innovation = One Impact

This makes the programme more distinctive than conventional RAWE (village visits, farmer interviews, awareness programmes, demonstrations, report writing, and routine data collection) because it adds a specific problem-solving mission to RAWE. In other words, it shifts the emphasis from **"student exposure" to "student-led problem solving and farmer-led innovation."**

Each student is assigned with 'one farmer', and in consultation with that farmer, 'one priority farmer-level problem' to be identified

↓

'One feasible, location-specific solution' need to be develop and implement by working with the farmers and technical expert

↓

Subsequently, the outcome may be measured and prepare a documented case study

Therefore, after completion of RAWE programme, each student should return from the village not merely with a report, but with one farmer whose one problem has been scientifically addressed and documented.

Abstract

The Rural Agricultural Work Experience (RAWE) programme offers agricultural students practical experience and insight into the socio-economic and technological realities of farming communities. To make RAWE more problem-oriented, participatory, and outcome-driven, the One Student-One Farmer-One Solution (OSOFOS) programme has been launched through Krishi Vigyan Kendras (KVKs) at BAU, Sabour.

In OSOFOS, each RAWE student is paired with a farmer to understand the farming system, identify a key farm-level problem, and help develop and implement a practical, location-specific, and economically viable solution. Students receive technical support from KVK scientists and subject-matter experts. The programme treats farmers as knowledge partners and co-creators, not just beneficiaries.

A key feature of OSOFOS is its focus on grassroots innovations and Indigenous Technical Knowledge (ITK). Students are encouraged to identify, document, and promote farmer-developed innovations, low-cost technologies, and locally adapted practices. KVKs may assess, validate, and share promising innovations for broader adoption.

The programme integrates problem identification, technical diagnosis, solution development, implementation, monitoring, impact assessment, and documentation. Key indicators include the number of farmer–student partnerships, problems solved, solutions implemented, innovations documented, technology adoption, productivity gains, cost reductions, income improvements, and replication of successful interventions.

OSOFOS aims to strengthen RAWE students' practical skills, problem-solving abilities, communication, and innovation. It also seeks to improve farm productivity, profitability, resource efficiency, and sustainability. Institutionally, it will enhance collaboration among students, farmers, KVKs, and agricultural universities, and build a repository of field problems, solutions, and grassroots innovations.

OSOFOS shifts the focus from "learning from farmers" to "learning with farmers and solving farmers' problems," making RAWE a farmer-centric, innovation-driven, and measurable field intervention model with potential for replication and scaling across KVKs and agricultural institutions.

Introduction

The Rural Agricultural Work Experience (RAWE) programme is a key part of agricultural education, offering students direct field experience to understand farming and rural livelihoods. As agriculture evolves, RAWE must shift from traditional observation to a more problem-oriented, participatory, and outcome-based model.

To enhance this approach, the Krishi Vigyan Kendras (KVKs) of BAU, Sabour have launched the "One Student-One Farmer-One Solution" (OSOFOS) Programme under RAWE. This programme seeks to create ongoing collaboration among students, farmers, and KVK scientists to identify farm-level challenges and develop practical, location-specific solutions.

Within the programme, each RAWE student is paired with a farmer and collaborates to analyze the farming system, identify a priority issue, and support the development and implementation of a feasible solution, with technical guidance from KVK scientists and subject-matter experts. The programme positions the farmer at the core of the problem-solving process, acknowledging farmers as beneficiaries, knowledge holders, innovators, and partners in agricultural development.

This work emphasizes identifying and documenting grassroots innovations, indigenous technical knowledge (ITK), locally developed practices, and low-cost farmer innovations. Promising innovations are then technically evaluated, validated, and disseminated through Krishi Vigyan Kendras (KVKs) to support broader adoption.

The programme aims to transform RAWE from a conventional learning initiative into a field-based platform focused on problem-solving and innovation. It will strengthen students' practical skills, enhance farmer-scientist collaboration, support farmer-led innovation, and deliver measurable farm-level outcomes.

The goal is to establish a scalable, replicable model of student-farmer engagement where each student addresses at least one real agricultural problem and achieves a documented, measurable impact.

One Student–One Farmer–One Solution (OSOFOS) programme under RAWE can be framed around the following objectives:

"One Student–One Farmer–One Solution aims to transform the RAWE programme from experiential exposure into a problem-solving initiative by enabling every student to identify one real farm problem of one farmer and facilitate one practical, science-based solution with the support of KVK experts."

Agriculture Education for Stronger Farmers, Brighter Tomorrow

Dr. D. R. Singh
Vice Chancellor, BAU, Sabour

Objectives:

1. To provide experiential learning to RAWE students by exposing them to real farm situations.
2. To enable each student to identify one specific and measurable farm-level problem faced by an assigned farmer.
3. To develop and recommend a practical, location-specific, technically validated and economically feasible solution.
4. To strengthen the farmer–student–scientist linkage through structured interaction.
5. To promote the application and adoption of scientific agricultural technologies.
6. To develop students' diagnostic ability, problem-solving ability, communication skills, observation skills, interpersonal skills, data-management skills, and extension competence.
7. To identify and document grassroots innovations, indigenous technical knowledge (ITK), farmer-developed technologies, local practices, and adaptive solutions.
8. To document the problem, intervention, and outcome as a standardized case study.
9. To create a digital repository of successful farmers innovations and solutions.
10. To assess impact in terms of productivity, profitability, cost reduction, resource-use efficiency, sustainability, or reduction in production constraints.
11. To encourage students and farmers to explore low-cost, locally available, practical and sustainable solutions.
12. To develop a replicable extension model that can be institutionalized "One Student-One Farmer-One Solution" across colleges, villages and agricultural universities.

KVKs of BAU as the Technical Bridge

STUDENT	**:**	**Identifies the problem**
KVK	**:**	**Assists diagnosis and technology assessment**
UNIVERSITY SCIENTIST	**:**	**Provides specialist expertise**
FARMER	**:**	**Implements/validates**
STUDENT	**:**	**Measures outcome**
KVK + UNIVERSITY	**:**	**Facilitate replication**

Methodology of the

"One Student–One Farmer–One Solution" Programme

The programme should begin with a 'problem' rather than technology. The core idea is that the student should enter the village with the thinking 'what is the farmer's most important problem?' and 'what scientifically validated solution can realistically address it?' It may be implemented through a problem-solving, participatory and innovation-oriented approach with KVKs serving as the technical and coordination hub.

1. Student orientation and preparation: Before field placement, RAWE students will be oriented by KVK scientists on participatory rural appraisal, farmer interaction, problem identification, grassroots innovation, documentation, diagnosis and solution development.

2. Selection of farmers: Each student will be linked with ONE FARMER, preferably a progressive, small/marginal, women or young farmer, representing different farming systems and socio-economic conditions. At the same time, the student should build rapport with the farmer and understand his/her farm, family, enterprise, and production system.

3. Baseline interaction and farm profiling: The student will interact regularly with the assigned farmer and prepare a brief profile covering landholding, cropping pattern, livestock/allied activities, resources, technologies adopted and economic conditions. Besides, the student should identify possible problems.

4. Identification of one priority problem: Through observation, discussion and participatory diagnosis, the student and farmer will jointly identify ONE PRIORITY PROBLEM**.** The problem should be practical, locally relevant and amenable to intervention. The student investigates the causes and discusses the problem with a KVK /college/university scientist.

5. Identification of grassroots innovation/indigenous knowledge: The student will specifically explore whether the farmer or other farmers in the village have developed any grassroots innovation, indigenous practice, low-cost technology or locally adapted solution related to the identified problem.

6. Technical diagnosis by KVK: The identified problem and possible farmer innovation will be discussed with the concerned KVK scientist/subject-matter specialist. Where

necessary, soil testing, pest/disease diagnosis, farm records, expert consultation or other technical assessment may be undertaken.

7. Co-development of the solution: The student, farmer and KVK expert will jointly develop **one feasible solution**, giving priority to:

- locally available resources;
- low-cost and affordable technologies;
- farmer-developed innovations;
- climate-resilient and sustainable practices;
- gender- and youth-friendly approaches; and
- economically viable solutions

8. Validation and field implementation: The proposed solution will be implemented on the farmer's field, wherever feasible. If a grassroots innovation is identified, it may be documented, technically evaluated and scientifically validated before recommending wider dissemination. The student will measures changes against baseline.

9. Demonstration and handholding: The student will assist the farmer in implementing the intervention, while the KVK scientist will provide technical backstopping. Regular visits will be made to monitor progress and resolve emerging problems.

10. Documentation of the innovation and intervention: Each student will prepare a "ONE FARMER–ONE PROBLEM–ONE SOLUTION" case record, including:

- farmer profile;
- identified problem;
- baseline situation;
- grassroots innovation/ITK, if any;
- proposed solution;
- intervention process;
- photographs/videos;
- cost and benefit;
- farmer feedback; and
- outcome/impact

11. Impact assessment: The intervention will be assessed using indicators such as Productivity, Cost Reduction, Net Return, Labour requirement, Benefit-Cost Ratio, Resource-Use Efficiency, Adoption Score, Reduction in losses and Farmer Satisfaction**,** as applicable.

12. Knowledge sharing and scaling-up: Successful solutions and promising grassroots innovations will be presented during the RAWE concluding programme and documented by the KVK. Selected innovations may be further taken up for technology validation, demonstration, publication, digital dissemination, farmer training and scaling-up.

Proposed Implementation Flow

Student–Farmer Linkage → Farm Profiling → Problem Identification → Grassroots Innovation Identification → KVK Technical Diagnosis → Co-development of Solution → Field Implementation → Monitoring → Impact Assessment → Documentation → Validation & Scaling-up

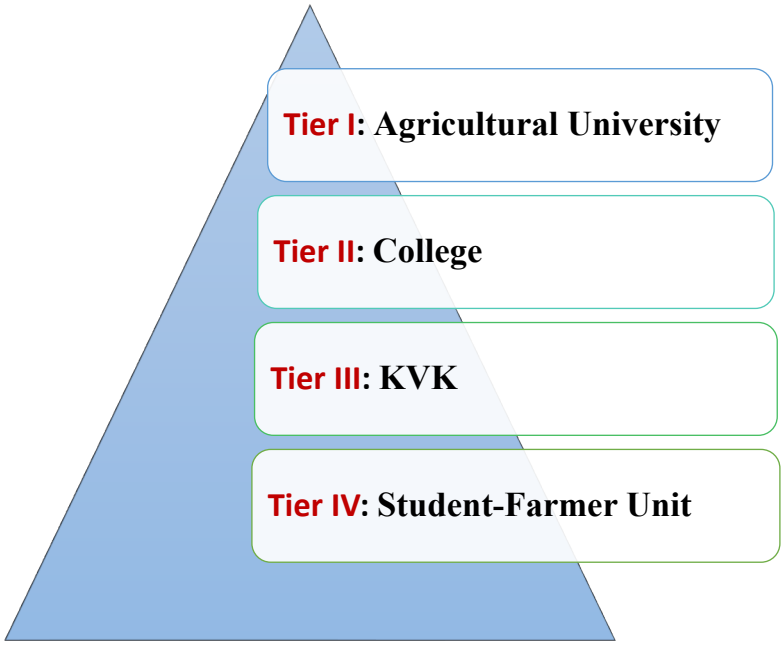
Institutional Mechanism

The programme should not be delegated solely to individual students. Instead, it should be implemented through a four-tier institutional structure.

OSOFOS-RAWE Coordination Committee

Tier		Major responsibilities
I	**Agricultural University**	• Programme policy • Technical guidelines • Common formats • Digital database • Monitoring framework • Expert pool • Quality control • Annual evaluation • Compilation of successful cases
II	**College**	• Farmer allocation • Student Allocation • Technical Mentoring • Problem Screening • Expert Consultation • Monitoring

		• Evaluation • Final Presentation
III	**KVK**	• Technical Diagnosis • Field Verification • Soil/Water/Plant Sample Testing Where Required • Technology Recommendation • Expert Consultation • Demonstration Support • Farmer Training • Monitoring • Validation Of Innovative Solutions
IV	**Student–Farmer Unit**	• Student + Farmer = One Learning Unit • The student becomes the "Farm Problem Explorer" • The farmer becomes: Co-creator



This methodology will make the programme participatory, farmer-centric, solution-oriented and innovation-driven, while ensuring that every RAWE student produces a tangible field-level outcome rather than merely completing a field visit.

For the One Student–One Farmer–One Solution (OSOFOS) programme, measurable indicators should capture not only activities but also problem-solving, grassroots innovation, adoption and impact.

Suggested Measurable Indicators

S. No.	Indicator	Measurement
1.	Students enrolled	No. of RAWE students participating
2.	Farmer–student linkage	% / No. of students linked with one farmer
3.	Farm profiles prepared	No. and % of farmers with documented baseline profiles
4.	Problems identified	No. of specific farm problems identified
5.	Problems technically diagnosed	% of identified problems assessed with KVK/subject-matter expert support
6.	Solutions developed	No. of farmer-specific solutions developed
7.	Solutions implemented	% / No. of solutions actually implemented on farmers' fields
8.	Grassroots innovations identified	No. of farmer innovations/ITKs documented
9.	Grassroots innovations validated	No. / % of innovations technically evaluated or validated
10.	Low-cost solutions	No. / % of solutions based on locally available resources
11.	Technology adoption	% of farmers adopting the recommended solution
12.	Productivity improvement	% change in yield/productivity over baseline
13.	Cost reduction	% reduction in input/production cost
14.	Income improvement	% increase in net return/income from the intervention
15.	Resource-use efficiency	% improvement in water, seed, fertilizer, labour or other resource efficiency, as applicable
16.	Reduction in losses	% reduction in pest, disease, post-harvest or production losses
17.	Farmer satisfaction	% of farmers reporting the solution as useful/satisfactory
18.	Student competency	% of students demonstrating competency in problem identification, diagnosis and solution development
19.	Case studies documented	No. of completed "One Farmer–One Problem–One Solution" case studies

S. No.	Indicator	Measurement
20.	Digital documentation	No. of innovations/solutions documented through photographs, videos or digital records
21.	Replication	No. of neighbouring farmers adopting successful solutions
22.	Solutions scaled up	No. of successful solutions/innovations taken up for wider KVK dissemination

Five Key Performance Indicators

For a simple RAWE monitoring dashboard

Every RAWE student is linked with one identified farmer

1. 100% Problem Identification: Every student identifies and documents one specific farm problem.
2. ≥80% Solution Implementation: At least 80% of identified problems receive a feasible solution that is implemented or tested.
3. Grassroots Innovation Documentation: At least one grassroots innovation/ITK is documented per KVK, wherever available.
4. Measurable Farm-Level Impact: At least 70% of implemented interventions demonstrate measurable improvement in one or more parameters such as yield, cost, income, resource efficiency or reduction in losses.

Impact Formula

Impact (%) = [(Post-intervention value − Baseline value) / Baseline value] × 100

For parameters where a reduction is desirable, such as cost or pest incidence: Improvement (%) = [(Baseline value − Post-intervention value) / Baseline value] × 100

Indicator for assessing the impact of the programme: A "One Student–One Farmer Impact Score" based on five components may be introduced to assess the impact:

Problem identified (20%) + Solution implemented (20%) + Grassroots innovation/ITK (20%) + Measurable impact (25%) + Documentation & replication (15%) = 100 points

This would allow KVKs to rank successful student-farmer interventions and identify the best grassroots innovations for further validation and scaling.

Impact of the OSOFOS programme can be assessed at the INSTITUTIONAL LEVEL with the following performance Indicators:

SI. No.	Indicator name	Formula	Target
KP1	Problem Resolution Rate (PRR)	$PRR = \frac{Problem\ satisfacorily\ addressed}{Total\ problem\ selected} \times 100$	≥80%
KP2	Solution Adoption Rate (SAR)	$SAR = \frac{Farmers\ adopting\ recommened\ solution}{Farmers\ receiving\ solution} \times 100$	≥70%
KP3	Measurable Farm Impact (MII)	Percentage of cases showing improvement in at least one major indicator: • yield • net return • cost • resource efficiency • constraint reduction	≥60% of completed cases
KP4	Student Competency Gain (SCG)	Pre- and post-assessment of: • diagnosis • communication • problem solving • technical recommendation • documentation $SCG = Post\ test\ score - Pre\ test\ score$ $Gain\ \% = \frac{Post\ -\ Pre}{Pre} \times 100$	≥25% improvement
KP5	Replication Potential (RPI)	$RPI = \frac{Cases\ suitable\ for\ replication}{Successful\ cases} \times 100$	≥50%

Composite OSOFOS Impact Index (OII)

$$OII = \frac{PRR + SAR + MII + SCG + RPI}{5} \times 100$$

where each component is converted to a 0–100 scale.

Interpretation	
OII	**Performance**
≥80	Excellent
70–79	Very good
60–69	Good
50–59	Moderate
<50	Needs improvement

Expected Outcomes of the One Student–One Farmer–One Solution (OSOFOS) Programme

The OSOFOS programme is expected to generate tangible outcomes at the student, farmer, KVK and institutional levels.

1. Student-Level Outcomes

- Improved practical knowledge and understanding of real-life farming situations.
- Enhanced skills in problem identification, diagnosis, communication, innovation and solution development.
- Development of confidence in interacting with farmers and providing need-based extension support.
- Improved ability to connect scientific knowledge with farmers' indigenous knowledge and field realities.
- Development of entrepreneurial and problem-solving capabilities among RAWE students.

2. Farmer-Level Outcomes

- Identification and resolution of at least one priority farm problem per participating farmer.
- Increased adoption of feasible and location-specific agricultural technologies.
- Reduction in production costs, input losses and avoidable risks, wherever applicable.
- Improvement in productivity, profitability, resource-use efficiency and sustainability.
- Greater access to KVK scientists, university experts and scientific information.
- Increased recognition and confidence of farmers as innovators and co-creators of agricultural solutions.

3. Grassroots Innovation Outcomes

- Identification and documentation of farmer-led grassroots innovations and Indigenous Technical Knowledge (ITK).
- Scientific assessment and validation of promising farmer innovations.
- Development of a digital repository/database of grassroots innovations at KVK level.
- Wider dissemination and replication of successful farmer innovations.

- Recognition of innovative farmers through appropriate platforms and extension activities.

4. KVK-Level Outcomes

- Development of a systematic database of farmer problems, solutions and innovations.
- Strengthening of the KVK's role as a problem-solving and innovation facilitation centre.
- Generation of location-specific case studies and success stories.
- Identification of emerging technology gaps requiring research or technology refinement.
- Strengthened linkage among KVKs, universities, farmers, students and other stakeholders.

5. Measurable Farm-Level Outcomes

Where applicable, the programme will measure:

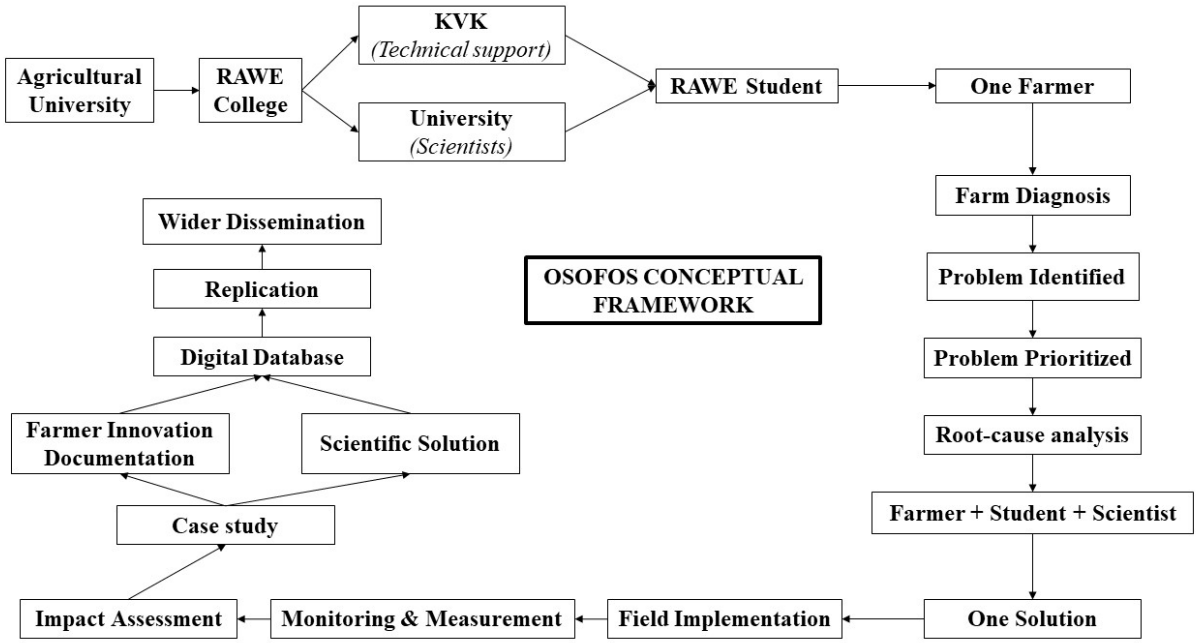
- Increase in crop/livestock productivity
- Reduction in cost of production
- Increase in net returns/farm income
- Improvement in resource-use efficiency
- Reduction in pest, disease or post-harvest losses
- Increase in technology adoption
- Farmer satisfaction and willingness to continue the intervention
- Replication of successful solutions by neighbouring farmers

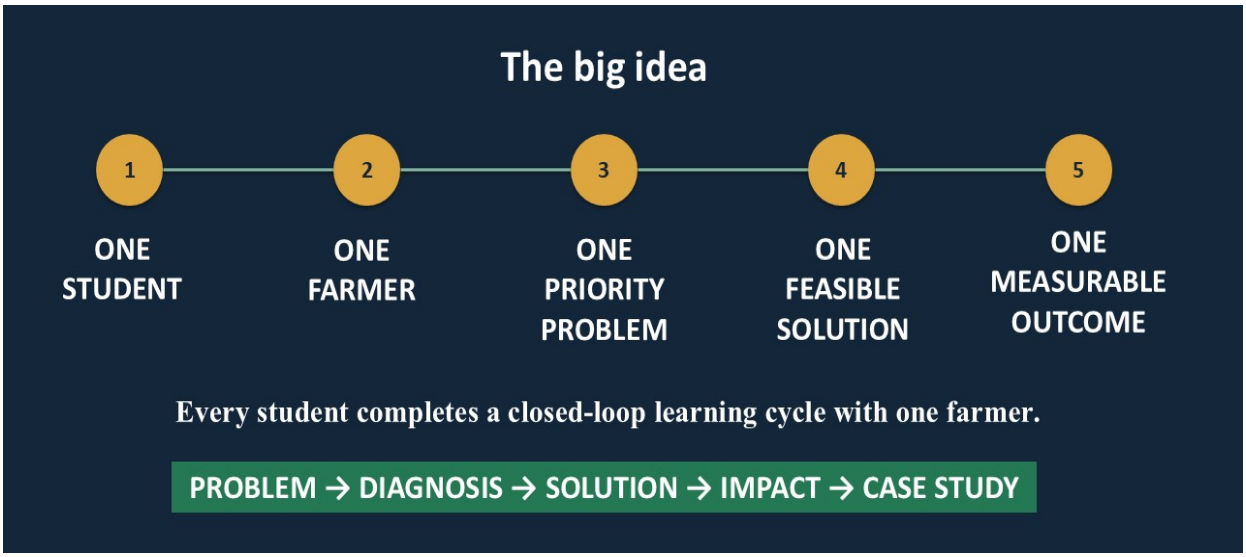
6. Institutional and Long-Term Outcomes

- Transformation of RAWE into a problem-oriented, farmer-centric and outcome-based programme.
- Creation of a culture of "learning by doing and solving by working with farmers."
- Establishment of a sustainable mechanism for identifying field-level problems and grassroots innovations.
- Generation of evidence for future research, extension planning and technology development.
- Creation of a scalable model that can be replicated across KVKs, districts and agricultural universities.

Overall Outcome: "Every Student–Every Farmer–Every Problem–Every Solution–Every Impact."

The ultimate outcome of OSOFOS will be to ensure that every participating RAWE student contributes to solving at least one real farm-level problem, while documenting the resulting innovation, adoption and measurable impact for wider replication.





Conclusion

The "One Student–One Farmer–One Solution (OSOFOS)" model transforms RAWE from a conventional field-exposure activity into a structured, problem-solving and impact-oriented experiential learning process. By connecting the University, College, KVK, scientists, students and farmers, the model creates a continuous pathway from farmer problem identification to scientific diagnosis, co-designed solution, field implementation, impact assessment and wider replication. The framework recognizes farmers as partners and knowledge holders while enabling students to apply classroom learning to real agricultural situations. The systematic documentation of problems, solutions, farmer innovations and outcomes further creates a valuable knowledge repository for future teaching, extension and research.

Imagine an Agricultural University where…

- Every RAWE student knows : **ONE FARMER**
- Every farmer contributes : **ONE REAL PROBLEM**
- Every student attempts : **ONE SOLUTION**
- Every intervention generates : **ONE EVIDENCE-BASED OUTCOME**
- Every successful case becomes : **ONE KNOWLEDGE RESOURCE**





Bihar Agriculture University, Sabour (Bhagalpur)

"One Student-One Farmer-One Solution" for Rural Agriculture Work Experience (RAWE) Student

Background Information of the Host Farmer

1. Name of the farmer :

(a) Total land owned by the farmer (ha) :
(b) Land suitable for cultivation (ha) :
(c) Land not suitable for cultivation :
(i) Farm Stead (ha) :
(ii) Waste land (ha) :

2. Soil Conditions :

(i) Topography :
(ii) Colour :
(iii) Texture :
(iv) Depth :
(v) Fertility Status :

4. Annual Average Rainfall of the district :

5. Irrigation facilities available on the field :

(i) Irrigation source :
(ii) Water availability period :
(iii) Approximate irrigated area (ha) :

6. Drainage requirement :

7. Crop(s) / Variety (s) i.e. grown by the farmers :

(i) During Kharif :
(ii) During Rabi :
(iii) During Summer :

8. Existing cropping systems practised by the farmer

(i) Cropped area during kharif :
(ii) Cropped area during rabi :
(iii) Cropped area during summer :
(iii) Category of seed used, if purchased :

9. Use of seeds

(i) Own seeds :
(ii) Seeds, if purchased / Procured (Source/Agency) :
(iii) Category of seed used, if purchased :

10. Use of agro-inputs

Fertilizers/Manures/Herbicides/Insecticides/Fungicides/Others etc. (quantity)

11. Adoption of cultivation practice by the farmer with reasoning

(i) Traditional practice :
(ii) Recommended practice :

12. Livestock/position in numbers

(i) Bullock :
(ii) Cows :
(iii) He buffaloes :
(iv) She buffaloes :
(v) Goats :
(iv) Others :

13. Farm machinery and power

(i) Tractor :
(ii) Trolley/bullock cart :
(iii) Plough :
(iv) Harrow :
(v) Leveller :
(vi) Seed drill :
(vii) Weeders :
(viii) Threshers / Winnowers :
(ix) Chaff cutters :
(x) Availability of electricity :

14. Market facilities (Regulated/Unregulated): (Mandi, Cold storage if any)

15. Transport facilities (Road, Railways) :

16. Loan facilities

Cooperative or commercial or private Banks, **:**
Government Agencies, Other sources

17. Technological facilities

(i) Training Centres / Charcha Mandal :
(ii) Television / Radio :
(iii) Public Library :
(iv) Krishi Vigyan Kendra :
(v) Research Centre :
(vi) NGO's :

18. Calendar of the farm operation during the crop season/year. Calendar of agricultural operations done by the farmer*

S.No.	Day and Date	Name of the operation performed by the (Attach a separate sheet, if necessary)
1.		
2.		
3.		

* Calendar should be maintained for the following:

I. Crop Production

(a) Land preparation :

(i)Number of ploughing / harrowing :
(ii) Levelling :
(iii) Soil and water conservation practices :
Practices/ soil amendments :
(iv) Any practice to facilitate :
(irrigation/drainage) :

(b) Seed and sowing

(i) Seed treatment/seed inoculation :
(ii) Raising of nursery, if needed :
(iii) Seed rate :
(iv) Method of nursery raising :
(Sowing, Fertilizer Application
Irrigation, after care), if needed
(v) Date of sowing/transplanting :
(vi) Method of sowing of Transplanting :
(if applicable)
(vii) Date of sowing/transplanting :
Plant population etc.
(viii) Thinning / gap filling :
(ix) Bird watching / aftercare after seeding :

(c) Fertilizer application

(i) Application of organic manures :
(ii) Application of fertilizers
(iii) Method and time of manure and fertilizer application :
(iv) Any other information on nutrient management :

(d) After care

(i) Weed control :
(ii) Intercultural operations :
(iii) Manual / cultural
(iv) Mechanical / Chemical weed control measures, if any :
(v) Special cultural operations, if any :
(vi) Any other information like earthening :
stacking, wrapping, nipping etc

(e) Irrigation

(i) Time of irrigation (s) :
(ii) Drainage, if done :

(f) Plant protection

(i) Time and stage of the occurrence of the pests/diseases :
(ii) Severity of the pest/diseases :
(iii) Extent of damage caused :

(g) Control measures adopted for the control of insects' pest/diseases :

(i) Type of sprayer / no .....used by farmers :
(ii) Insecticides pesticides used, dose and frequency of application :
(iii) Any other information like bird watching etc. :

(h) Harvesting, threshing and processing

(i) Date of harvesting and duration :
(ii) Transportation to the threshing floor :
(iii) Threshing (manual/animal / machinery) :
(iv) Winnowing (method, time) :
(v) Storage, processing, marketing facilities :
(vi) Any other work :

Summary of the work by the student done on the farmer's field (Brief comment):

Suggestions to farmers for future work (In bullets):

1.
2.
3.
4.
5.
6.
7.

Format – I

Agricultural Operation Performed by the Host Farmers
(Some good photographs of important features can be attached)

Name of the host farmers: .....

Village : ..... **Block :** .....

District : ..... **Cropping Season(s) :** .....

Year : .....

Field No.	Field area (ha)	Crop(s) Variety(s) grown	Agronomic operation done by the farmer during crop production				
			Tillage	Seed rate, Sowing date seed treatment, sowing method etc.	Manuring and Fertilizer application	Weed control and inter-culture operations	Irrigation and drainage
1	2	3	4	5	6	7	8

Agronomic operations were done during crop				Actual Yield per ha	
After care / plant protection	Harvesting	Transportation to the threshing floor	Threshing and winnowing	Main production (Grain/Tubers/Green vegetable)	By-product (Straw/Stover/Haulm)
9	10	11	12	13	14

Estimated value of the produce (Rs./ha)

Main produce	Main produce	Main produce	Estimated expenditure (Rs./ha)	Profit or loss (Rs./ha)
15	16	17	18	19

Signature of Farmer **Signature of Student**

II. Fruit and Vegetable Production Interventions

A. FRUIT PRODUCTION

1. **Name of Village/Block/District .....**
2. **Name of the Farmer .....**
3. **Plot No. Crop & Crop Variety Area (ha)/No. of trees**

   ii. .....

   iii. .....

   iv. .....

   v. .....

4. Manures/Fertilizers applied Time Quantity

   Fruit crops/intercrop

5. Inter-crop taken (name of the crop season) Crop Area / Plant population m²
6. Yield obtained

   i) Fruit Crop Area Quality Amount (Rate/kg)

   ii) Inter Crop

7. **Yield per ha/per tree**
8. **Cultivation Problems**
9. **Income in Rs. Fruit Crops / Inter Crops :**
10. **Net Expenditure Rs.** per ha per tree
11. **Mode of transport and sale of the produce**
12. **Status of production technology**
13. **Suggestions if any**
14. **Total area cultivated**
15. **Irrigated area**
16. **Area in fallow**
17. **Area under fruit/horticultural crop**
18. **Net Profit** per ha per tree

III. VEGETABLE PRODUCTION

1. Cropping Scheme for Vegetables (period of reports)

S. No.	Crop	Variety	Area (ha)
i	Brinjal		
ii	Potato / Tomato		
iii	Onion/Garlic		
iv	Cabbage /Cauliflower		
v	Chilies/Coriander/Fenugreek		
vi	Other		

2. Nutrient Application:

	Time	Quality	Rate	Value
Manure applied				
Fertilizer applied				
Green manure used				

3. Intercrop taken: Crop Area

Kharif -
Rabi -
Summer -

4. **Actual yield obtained:** Quantity (No./Q) Rate Rs. Value Rs.

Main vegetable -
Inter crops -

5. Yield per ha (Quintal /No.)

Main crops
Inter crops

6. **Estimated cost:** Main crop: .....

7. Gross Income in Rs. (value) Inter crop: .....

8. Net Income Rs. (value) per plot ..... per ha .....

9. Cost/ Benefit ratio per plot ..... per ha .....

Storage Interventions

1. **Grain contamination is influenced by**
   - Type of storage structure.....
   - Temperature.....
   - pH.....
   - Moisture.....

2. **Storage losses in grains (%)**
   - Type of structure used.....
   - Length and purpose of storage.....
   - Grain treatment.....
   - Pre- storage practices.....

3. What are the insects that are seen during storage

S. No.	Name of Crop	Insect pests observed during storage
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

4. Name of the structure used for grain storage:

Outdoor structures

1. Name……
   ……
2. Quantity
   stored……
3. Materials used for construction of the storage
   structure……..
4. Any innovative practice that the farmer has evolved/
   demesnes…….
5. Problem observed by farm in storage shape of the
   structure……..
6. Traditional or modern
   method……
7. Fumigation
   practices……..
8. Time
   schedule……
9. Inter
   opening…….

5. Control Measures adopted by Farmers for Storage pest & Rodent

S. No.	Name of Insect	Control Measures
1.	Beetles	
2.	Weevils	
3.	Moth	
4.	Other	

6. Type of control measure used for Rodents by farmers

(Kindly tick the method used by the farmers of the locality)

- Fumigant aluminium phosphide
- Rodent rat cases
- Poison baits
- Rat borrow fumigation

7. Storage Structure used by the farmers of the locality

- Kothi/Banda
- PAU Bin (capacity 1-5 to 15 quintal)
- Pusa Bin (made from mud and bricks polythene)
- Cylindrical rubberized cloth structure
- CAP storage (cover and plinth)
- Silo
- Large-scale storage
- Other (Specify)

8. Students have to write at least two indigenous practices used for safe grain storage adopted at the village.

i)

ii)

IV. Animal Production Interventions

Information of Livestock

Particulars	Strength of livestock	Name of the Breed
Cow class		
1. Adult cows		
a) Milking		
b) Dry		
2. Heifers		
3. Breeding bulls		
4. Bullocks		
Buffalo class		
1. Adult Buffaloes		
a) Milking		
b) Dry		
3. Heifers		
4. Bulls		
Sheep		
1. Young stock		
2. Adult stock		
3. Adult rams		
4. Adult ewe		

Goat		
1. Young stock		
2. Adult stock		
3. Adult bucks		
4. Adult doe		
Poultry/ Pig/ Fish		
1. No. of chicks/piglets/fingerlings		
2. No. of layers/broilers/boar/sow		
Cost Structure	**Amount (Rs.)**	**Remarks**
1. Cost of animals (if purchased)		
2. Cost of dairy structure and paddocks		
3. Total cost of dairy structures		

Daily maintenance and feeding expenses

Particulars	**Cow**		**Buffaloes**		**Sheep/Goats**		**Poultry**	
	Qty.	**Amt (Rs.)**	**Qty.**	**Amt (Rs.)**	**Qty.**	**Amt (Rs.)**	**Qty.**	**Amt (Rs.)**
1. Labour male/female requirement								
2. Concentrates (kg)								
3. Green roughages (kg)								
4. Dry roughages (kg)								
5. Mineral mixtures (kg)								
6. Veterinary aids including breeding								
7. Total expenses per day								

Daily Milk Production and Disposal Record

(A) Milk Production

Date	**No. of animals in milk**				**Milk Produced (L)**				**Total Milk Produced (L)**
	Cow	**Buffalo**	**Sheep**	**Goat**	**Cow**	**Buffalo**	**Sheep**	**Goat**	

(B) Milk Disposal (L)

Date	Home consumption (Cow/Buffalo/ Sheep/Goat) Whole milk /Milk Products	Utilized for making Products (Cow/Buffalo/ Sheep/Goat) Ghee/ butter/Khoa/ Curd/Others	Sale (raw milk) (Cow/Buffalo/ Sheep/Goat)	Name of agency to which sold	Income (Rs.) Rate of Dairy Milk/Unions/ Milk Vendors

Daily Production and Disposal Record

(A) Dairy Products

Date	Name of the dairy products	Quantity of dairy products (Kg)	Quantity sold (Kg)	Name of agency to which sold	Income (Rs.) Rate/kg.

(B) Eggs and Birds

Date	Breed/strains of Birds and system of keeping /rearing	Production of		Home consumption		Disposal of		Name of agency to which sold	Income (Rs.)
		Eggs	Birds/ Chicks	Eggs	Birds /Meat	Eggs	Birds		

(C) Pig

Date	Breed & system of keeping/ rearing	Production of Animals/Piglets	Disposal of Animals	Name of agency to which sold	Income (Rs.)

(D) Any Other Animals / Birds

Date	Species/Breed& system of keeping /rearing	Production of		Home consumption		Disposal of		Name of agency to which sold	Income (Rs.)
		Eggs	Birds/ Chicks	Eggs	Birds /Meat	Eggs	Birds		

Yearly Production and Disposal Record

Particulars	Amount (Rs.)
A) Total production of – 1. Animals 2. Milk and milk product 3. Dung/F.Y.M. 4. Eggs 5. Poultry Birds/Chicks 6. Wool 7. Meat	
B) Disposal of – 1. Animals 2. Milk and milk product 3. Dung/F.Y.M. 4. Eggs 5. Poultry Birds 6. Wool	
C) Yearly income from the sale of 1. Animals 2. Milk and milk product 3. Cow dung / F.Y.M. 4. Eggs 5. Poultry Birds 6. Wool	
Total income (Rs.)	

Yearly Receipt and Expenditure Statement

Particulars	Amount (Rs.)
A) Receipt/ revenues- * Total income obtained from the sale of all items	
B) Expenditure- 1. Cost of feeds and fodders	

2. Labour costs 3. Land revenue etc. 4. Medicines & Vaccines (Veterinary Aids) Total expenditure	
C) Net profit (Receipt- Expenditure)	

V. Extension and Transfer of Technology Activities

Examination of various agricultural and rural development programs, extension services, and organizations' development initiatives and activities

1. Identifying problems of farmers:

It is suggested that information be gathered from individual farmers in order to identify the challenges facing farmers. In order to identify both specific and general agriculture concerns, the students will get in touch with the farmers and gather the data listed in the timetable.

- Name of the farmer:
- Village:
- Education
- Age:
- Total members in family:

Men . . . . . Women . . . . . Children . . . . . .

Total area of land owned (in ha)

Dry . . . . . Irrigated . . . . . Fallow . . . . . .

Sources of information used by farmers:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

2. Adoption of farm technology:

Gathering data regarding the use of suggested agricultural technology in relation to important crops is expected of the student.

S. No.	Crops/ varieties	Technology Adopted
1.		
2.		
3.		
4.		
5.		
6.		

3. Identifying specific gaps in adoption:

This form concerning a significant grain, cash, and oil seed/pulse crop that the farmer grows should be completed by the student. The Department of Agriculture's or Agriculture University's research recommendations may have provided the information used to compile the recommended practices. The data gathered by the student in Agronomy and Agriculture Economics may be utilized in relation to the information regarding the farming activities.

S. No.	Recommended practices	Practices followed by farmers	Extent of gap in adoption of recommended technology	Constraints in adopting recommended practices	Action-oriented suggestions
1.					
2.					

After collecting the information in the schedule, the student should record his observations in the following proforma.

S. No.	Agricultural problems identified	Action- oriented suggestions for solving the problems
1.		
2.		

4. Survey on Utilization of Internet and Mobile Applications by the Farmers for Agriculture Purposes

With the advent of Internet and especially various applications for android mobiles and availability of android phones along with affordable data plans for ordinary person, the usage of

internet as well as different social media and various agriculture related applications is increasing day by day by the farmers for obtaining required information such as production technologies, weather and climate, plant protection, post-harvest management, marketing of agro produce etc.

The various apps are developed by government and other organizations such as Kisan suvidha, Pusa Krishi, Soil health card, Crop insurance, Agri. market (Ministry of Agriculture, GOI), Krishi video advice (MANAGE, Hyderabad), IFFCO Kisan Agriculture (IFFCO), etc. the farmers are, now a days, using such apps for obtaining information and utilizing it at their level for satisfying needs.

Taking into account these facts, it is expected from the students of final year B.Sc. Hons. (Agri.) undergoing RAWE program to study the internet utilization behavior of farmers and how it is influencing farm management practices of them. Each student shall contact at least 20 farmers from allotted village and obtain information on following points.

1. Name of the Farmer:
2. Address:
3. What's App No.:
4. E mail id.:
5. Adhar No.:
6. Educational qualification:
7. Land holding (ha.):
8. Crops grown:
9. Crop wise Experience in Farming (years)

5. Frequency of using Internet/ Mobile apps (Tick mark in relevant column)

S. No.	Particular	Daily	Weekly	Fortnightly	Monthly
1	E-mail				
2	Social medial like FB/WA				
3	You tube videos				
4	Write name of the mobile apps related to agriculture				
	Other online sources				

a. Are you member of WhatsApp group related to agriculture? Yes/ No (If yes, give details)

b. Date & year of WhatsApp group created:

Sr. No.	Name of WhatsApp group	Name of Admin	No. of participants	Nature/ Purpose of information received
1				
3				
4				
5				
6				

c. Are you member of face book group related to agriculture? Yes/ No (If yes, give details)

Date & year of Face book group created:

S. No.	Name of FB group	Name of Admin	No. of participants	Nature/ Purpose of information received
1				
2				

d. Give details about use of agriculture related apps used by you.

S. No.	Name of App	Name of Organization	Purpose of App	Nature/ Purpose of information received
1				
2				
3				

e. Do you visit websites of different agricultural institutes? Yes/ No (If yes, give details)

S. No.	Web address	Name of Organization	Purpose of visiting website	Nature/ Purpose of information received
1				
2				
3				
4				

f. Do you watch different videos (Agricultural related) on you tube channel? Yes/ No

(If yes, give details)

Date of upload of videos:

S. No.	Name of you tube channel subscribed	Name of host/ owner	Number of subscribers	Nature/ Purpose of information received

g. Do you read e Papers / e Magazines / eBooks/Internet blogs? Yes/ No (If yes, give details)

Name of e Papers /e Magazines/ eBooks/ Internet blogs

(i)

(ii)

h. Have you participated in online training/ webinar organized by SAUs/ KVKs or any other agriculture related organizations?

S. No.	Name of organization	Topic of the programme	Name of expert/s involved	Nature/ Purpose of Information received	Duration of Programme
1					
2					
3					
4					

i. Do you face any problem during use of Internet or Apps?

j. Is there any suggestion for overcoming problems or improvement in information provided?

6. Have you received the Pradhan Mantri-Kisan Samman Nidhi (PM-Kisan) scheme?

7. How do you utilize the PM-Kisan installment for agricultural purpose?

8. Have you registered on the Bihar Farmers Registry Portal?

Signature of Farmer **Signature of Student** **Signature of Officer I/c RAWE**

RAWE SHOULD NOT

MERELY PRODUCE REPORTS

RAWE SHOULD

PRODUCE SOLUTIONS

ONE STUDENT – ONE FARMER – ONE SOLUTION

Learn from the Farmer. Solve with Science.

Create Impact.

63 विश्वविद्यालयों के छात्र बीएयू के साथ देश को बताएंगे अनुभव

उपलब्धि

भागलपुर, वरीय संवाददाता। बिहार कृषि विश्वविद्यालय (बीएयू), सबौर के शोध एवं अनुसंधान की धमक पूरे देश में है। यहां की शैक्षणिक और प्रायोगिक गुणवत्ता सहित अन्य उपलब्धि को अब 16 राज्यों के 63 विश्वविद्यालयों के छात्र देश को बताएंगे। ये ऐसे छात्र हैं, जो बीएयू में रूरल एग्रीकल्चर वर्क एक्सपीरिएंस (रावे) कार्यक्रम के तहत हर साल आते हैं। वे विवि में कृषि की व्यावहारिक बारीकियां सीखने के लिए आते हैं। अब तक जो छात्र प्रशिक्षण लेकर गए हैं, उनके वीडियो रिकार्ड से एक डॉक्यूमेंट्री तैयार कराई जाएगी। इसको लेकर कुलपति प्रो. दुनिया राम सिंह ने प्रसार निदेशालय को जिम्मेवारी दी है। इस डॉक्यूमेंट्री में छात्रों के रावे के तहत विवि में प्राप्त किए प्रशिक्षण का विस्तृत अनुभव होगा। यह डाक्यूमेंट्री कृषि क्षेत्र के विकास में बहुत मददगार साबित होगी।

कार्यक्रमों से जोड़कर प्रशिक्षित किया जाएगा

वे बताएंगे कि विवि में आने के बाद उन्हें किस तरह विभिन्न कार्यक्रमों से जोड़कर प्रशिक्षित किया गया। विवि में रहने से लेकर शिक्षकों और वैज्ञानिकों का कैसा सहयोग रहा। वे बीएयू को अपनी नजर से किस तरह देखते हैं, यह विवि उनके विवि से किस तरह अलग है।

खेत और ग्रामीण परिवेश में समझने का मिलता है अवसर

वे बताएंगे कि उन्होंने कृषि, ग्रामीण जीवन और आधुनिक कृषि तकनीकों के बारे में क्या सीखा। रावे कार्यक्रम के तहत विभिन्न राज्यों के कृषि एवं कृषि से जुड़े पाठ्यक्रमों में अध्ययनरत छात्रों को बीएयू में व्यावहारिक प्रशिक्षण दिया जाता है। इस दौरान छात्रों को कक्षा में पढ़ाए गए विषयों को खेत और ग्रामीण परिवेश में समझने का अवसर मिलता है। छात्र विश्वविद्यालय के विभिन्न प्रक्षेत्रों, प्रयोगशालाओं और कृषि गतिविधियों से जुड़कर प्रशिक्षण प्राप्त करते हैं। इससे उनका तकनीकी ज्ञान बहुत मजबूत होता है। यह अनुभव उनके भविष्य के लिए उपयोगी होगा।

16 राज्यों के विद्यार्थी शैक्षणिक और प्रायोगिक गुणवत्ता बताएंगे

- प्रसार निदेशालय को मिली डॉक्यूमेंट्री तैयार करने की जिम्मेवारी

डॉक्यूमेंट्री से विवि की गतिविधियों का दिखेगा प्रभाव

कुलपति ने निदेशक प्रसार शिक्षा डॉ. आरके सोहाने से कहा कि इस पर जल्द काम शुरू कर पूरा करें। प्रशिक्षण के दौरान छात्रों को बिहार की कृषि व्यवस्था, फसलों, मिट्टी, मौसम, सिंचाई व्यवस्था और किसानों की कार्यप्रणाली को करीब से समझने का मौका मिलता है। विवि के वैज्ञानिकों की टीम उनके साथ रहकर जरूरी जानकारियों से अवगत कराती है। इस डॉक्यूमेंट्री के माध्यम से विवि की गतिविधियों और प्रशिक्षण का प्रभाव दिखेगा। देश के अलग-अलग हिस्सों के लोग भी विवि की कार्य व्यवस्था को समझ पाएंगे। कुलपति प्रो. दुनिया राम सिंह ने कहा कि रावे के तहत आने वाले छात्रों के अनुभव से डॉक्यूमेंट्री तैयार कराई जाएगी। इस पहल का उद्देश्य है कि बीएयू की शैक्षणिक और व्यावहारिक गतिविधियों की जानकारी अधिक से अधिक छात्रों तक पहुंच सके।

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