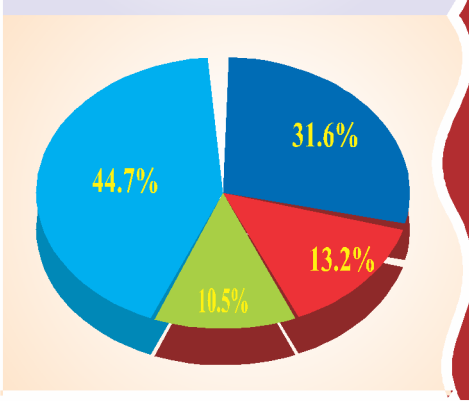

Impact Assessment of Weed Management Technologies

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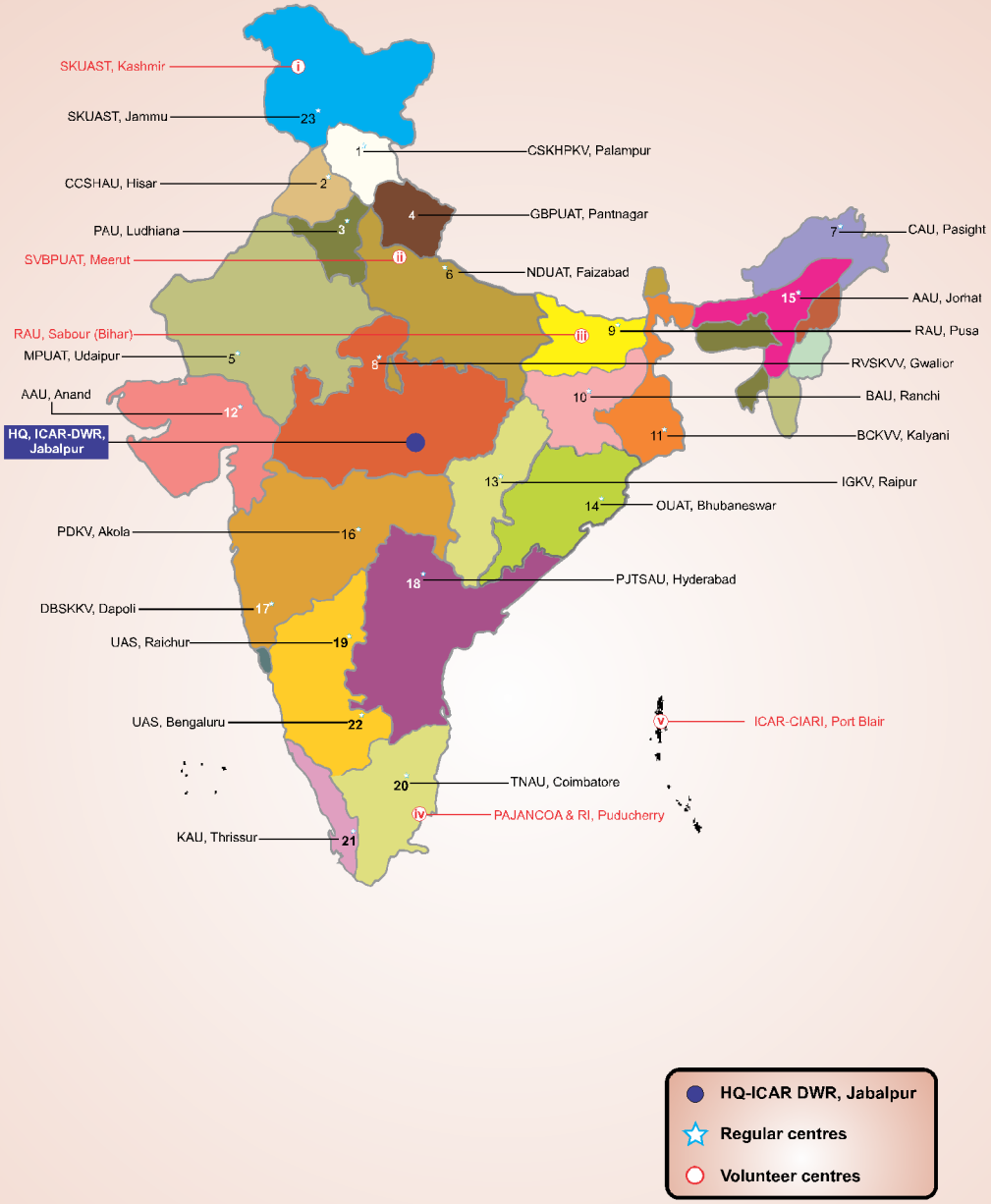
SKUAST, Kashmir
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PAU, Ludhiana
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CAU, Pasight
SVBPUAT, Meerut
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NDUAT, Faizabad
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AAU, Jorhat
RAU, Sabour (Bihar)
iii
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RAU, Pusa
MPUAT, Udaipur
5
8
RVSKVV, Gwalior
AAU, Anand
12
10
BAU, Ranchi
HQ, ICAR-DWR, Jabalpur
11
BCKVV, Kalyani
13
IGKV, Raipur
14
OUAT, Bhubaneswar
PDKV, Akola
16
18
PJTSAU, Hyderabad
DBSKKV, Dapoli
17
UAS, Raichur
19
v
ICAR-CIARI, Port Blair
UAS, Bengaluru
22
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TNAU, Coimbatore
iv
PAJANCOA & RI, Puducherry
KAU, Thrissur
21
HQ-ICAR DWR, Jabalpur
Regular centres
Volunteer centres

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Foreword

Weeds are considered as major biotic constraints in agricultural production. As per the available estimates, these cause up to 37% of the total losses in yield, besides impairing produce quality and other various kinds of health and environmental hazards. Considering the growing menace of weed infestations in cropped and non-cropped lands, the Indian Council of Agricultural Research decided to establish the National Research Centre for Weed Science, which came into existence on 22nd April, 1989. This centre was further upgraded as Directorate of Weed Science Research on 23 January, 2009; and renamed as ICAR- Directorate of Weed Research on 26 November, 2014. This is a unique institute in the National Agricultural Research System, which is probably the only one of its own kind in the whole world dealing exclusively with weed research.

The launching of the All India Coordinated Research Programme on Weed Control in 1978, which renamed as AICRP on Weed Management since 2014, was an important step forward by the Indian Council of Agricultural Research to develop location specific weed management technologies and their demonstration on the farmers' fields. This network programme started with initially six centres and gradually expanded; and at present 23 centres are running in all the major State Agricultural Universities throughout the country.

Over the last few decades, the Directorate and AICRP-Weed Management centres have played a pioneering role in conducting weed survey and surveillance, development of location-specific weed management technologies for diversified cropping systems, herbicide resistance in weeds, biology and management of problem weeds in cropped and non-cropped areas, and environmental impact of herbicides. Adoption of these location-specific advanced weed management technologies has been promoted on large areas through on-farm research and demonstrations, which has raised agricultural productivity and livelihood security of the farmers. In fact, weed management technologies are the most demanding in the present context in view of the large-scale labour scarcity for manual weeding and increased cost of cultivation.

In the present publication, adoption and impact assessment of all such location-specific need based advanced weed management technologies over the years have been compiled. It is hope that this document will be beneficial to our policy makers and all the stakeholders including the scientists, field functionaries and farmers for solving the weed related problems and reducing the crop losses by adopting the advanced weed management technologies. The efforts made by authors for bringing out this document are acknowledged. Any suggestion as well as comments for further improvement will be highly appreciated.

Place: Jabalpur
Date: 22 March, 2018

(P.K. Singh)
Director

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Preface

Weeds are one of the major biotic constraints in agricultural production system including non-cropped lands and aquatic situations. Weeds interfere with crops and compete for soil moisture, nutrients, sunlight and space; and subsequently reduce the quality of produce depending upon the nature and intensity of weeds, agro-ecological situations and management practices. As per the available estimates, more than one third of the total yield losses due to biotic stresses are caused by weeds alone which often get unnoticed due to their hidden effect on plant growth. During the last 40 years, progress has been made in developing different weed management methods. However, weeds remain one of the major constraints to agricultural production in developed and developing countries.

Various methods of weed management including preventive, mechanical, cultural, chemical, biological and biotechnological are being used in field crops with variable degree of success. Some weed control methods for instance manual/mechanical, though very effective, has certain limitations such as unavailability of labour during peak season, high labour cost, hostile environment particularly in rainy season etc. Under such situations, use of herbicides for weed control is advantageous and economical. In India, the herbicides form 16% of total pesticide consumption. However, due to sharp increase in wages and timely unavailability of labour because industrialization, urbanization and Government schemes like Mahathma Gandhi National Rural Employment Guarantee Scheme (MNREGS), herbicides are more acceptable to farmers. Currently, about 95 % of the herbicides is consumed in wheat (42%), rice (30%) and tea plantation (23%).

However, due to continuous use of herbicides, many weeds have developed resistance and now are difficult to control. On the other hand, crop-weed competition and efficacy of weed control measures are expected to be affected under climate changing scenario. Therefore, despite the development of various weed management know-hows and their adoption by the stakeholders, the problem of weed has virtually been increasing.

Therefore, keeping in view the importance of weed management in crop production systems, All India Coordinated Research Project on Weed Management was started in 1978 initially for the period of six years in India. Currently, it has 23 centres and headquarter situated at ICAR-Directorate of Weed Research at Jabalpur. Directorate is devoted to research and development of advance weed management practices with the help of different centres located at different states. Weed management practices are being developed and disseminated to different parts of the country with the help of these centres.

However, without the understanding of influential factors that promote change, farmers could lack some of the key critical skills needed to practice new technologies and methodologies. Hence, need was felt to observe the adoption and impact of different weed management technologies/practices adopted by farmers in terms of yield increase as well as socio-economic benefits and their role in livelihood security.

For the purpose, a questionnaire measuring the socio-economic impact, along with farmers' profiles and general awareness about weed management, was developed. The data were collected through questionnaire during 2014-15 from all centres of AICRP on Weed Management. Questionnaire includes the general information, land ownership pattern, cropping pattern, access to weed management technologies from different agencies, reaction of respondents on weed management technologies, awareness and adoption level of respondents, application of herbicide for weed control, constraints in adoption of improved weed management technologies/herbicides at farmer's level etc. In the study, total respondents were divided into five zones of 2-5 states in each namely Central, East, West, North and South zone and analysis along with observations are presented in different aspects.

Grateful thanks are due to various individuals and organizations including the incharge of AICRP-WM (PC Unit) and all PIs/scientists of various centres of AICRP-WM for providing needed support and contributing data to bring out this publication.

Authors

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1. Introduction

A study was conducted in different regions of India to assess the impact of weed management technologies adopted by farmers. For the study, information was collected in pre-tested questionnaire from different AICRP-Weed Management centres of eighteen states *viz*. Assam, Bihar, Chhattisgarh, Gujarat, Haryana , Himachal Pradesh, Jharkhand, Karnataka , Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand and West Bengal. The study aimed to observe the changes in farmers' living standard and livelihood security after adopting the weed management technologies. Total respondents were divided into five zones of 2-5 states in each.

- **Central zone**: It consists of four states *viz.* **Madhya Pradesh (92)*, Bihar (20), Chhattisgarh (19)** and **Uttar Pradesh (20)**. There were total 151 farmers from central zone on which information was collected and analyses were done.
- **East zone**: It comprises four states of the Eastern India *viz.* **Odisha (20), Jharkhand (22), West Bengal (20)** and **Assam (21)**. Information was collected on total 83 farmers for the study.
- **North zone**: It comprises four states *viz.* **Himachal Pradesh (20), Haryana (23), Punjab (22)** and **Uttarakhand (20)**. Total 85 respondents were included in the study.
- **South zone**: It comprises four states *viz.* **Telangana (10), Karnataka (20), Kerala (12)** and **Tamil Nadu (10)** and one union territory, **Puducherry (10)**. It was therefore total of 62 respondents in the south zone.
- **West zone:** It comprises two states *viz.* **Gujarat (20)** and **Maharashtra (11)**. Thus, information on total 31 respondents were collected from this zone.

Information on many aspects including socio-economic status, operational holding, cropping pattern, weed control methods used by farmers, access to weed management technologies from different agencies, economics, constraints in adoption of weed management technologies *etc.* were collected from the respondents during survey. These aspects are discussed below zone wise:

* Figures in parentheses followed by state name are no. of respondents in that state.

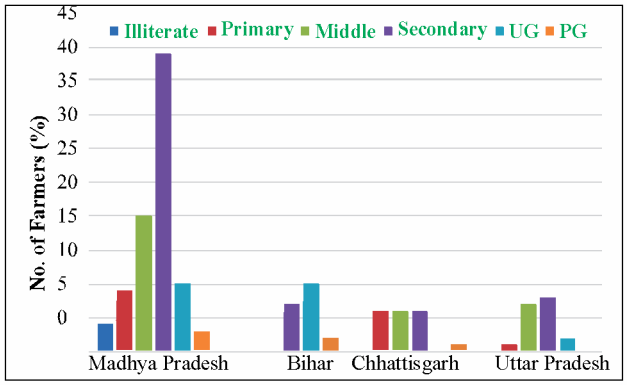
2. Socio-economic status of farmers

This section describes the general information as well as socio-economic status of the farmers. It includes the information on their educational level and occupation as well as details about secondary occupation, if any. It also possess information about the annual income and farming experience of the farmers as well.

2.1 Education

Central Zone

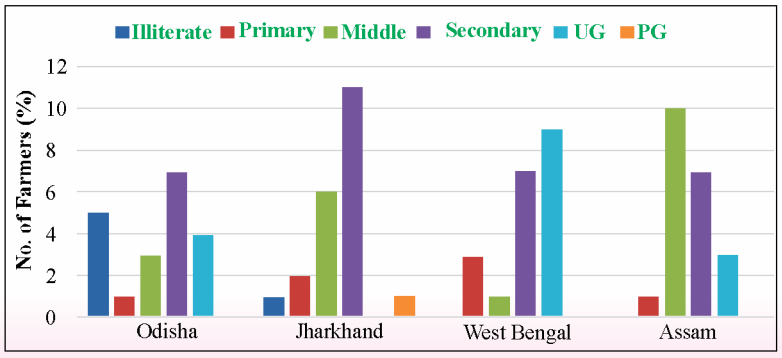
- Educational level of farmers in the Central Zone was found to be good.
- About 43% of the farmers of the central zone were educated up to secondary class in which more no. of farmers (44%) of **Madhya Pradesh** were having education up to secondary than other states of the zone.
- Only 18.53% farmers in the zone were having higher education (UG/PG).



UG - Under Graduate PG - Post Graduate

East Zone

- In East Zone, 38.5% of the farmers were having education up to secondary level.
- In **Odisha**, 25% farmers were illiterate whereas the respondents from **West Bengal** and **Assam** states were completely literate with maximum education up to UG level.



UG - Under Graduate PG - Post Graduate

North Zone

State	Illiterate	Primary	Middle	Secondary	UG	PG	Non Respondents
HP	--	02	05	08	03	--	02
Haryana	--	02	06	13	02	--	00
Punjab	--	--	05	13	04	--	00
Uttarakhand	02	--	--	10	04	02	02
Total (%)	2.35	4.70	18.82	51.76	15.29	2.35	4.70

HP- Himachal Pradesh UG - Under Graduate PG - Post Graduate

- Educational level of the respondents from North Zone was satisfactory.
- 51.8% respondents of the zone were educated up to secondary.
- Only few (15.3%) respondents were educated up to undergraduate level.

South Zone

State	Illiterate	Primary	Middle	Secondary	UG	PG	Non Respondents
Telangana	02	--	--	05	02	--	01
Karnataka	05	13	02	--	--	--	00
Kerala	--	--	--	10	02	--	00
Puducherry	--	01	--	03	04	01	01
Tamil Nadu	--	--	03	03	04	--	00
Total (%)	11.29	22.58	8.06	33.87	19.35	1.61	3.22

UG - Under Graduate PG - Post Graduate

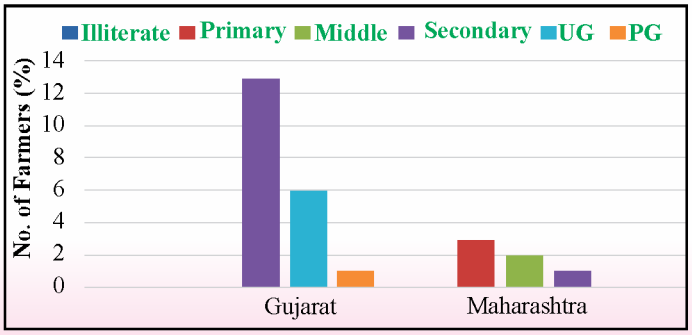
- In South Zone, most of the respondents were educated up to secondary.
- Out of 62 respondents, 22.6% were up to primary, 33.9% were educated up to secondary level, and 19.4% were up to under graduate level.

West Zone

State	Illiterate	Primary	Middle	Secondary	UG	PG	Non Respondents
Gujarat	--	--	--	13	06	01	00
Maharashtra	--	03	02	01	--	--	05
Total (%)	-	9.68	6.45	45.16	19.35	3.23	16.13

UG - Under Graduate PG - Post Graduate

- Educational level of the respondents from the West Zone was satisfactory.
- 67.74% respondents were educated at least up to the secondary class.



2.2 Main occupation

Central Zone

State	Farming	Business	Service	Labour	Pensioner	Other	Non Respondents
MP	87	--	--	01	02	--	02
Bihar	20	--	--	--	--	--	-
Chhattisgarh	19	--	--	--	--	--	-
Uttar Pradesh	19	--	--	01	--	--	-
Total (%)	96.02	--	--	1.32	1.32	--	1.32

MP- Madhya Pradesh

- About 96% of farmers were having farming as the main occupation in all states of Central Zone.
- In **Bihar** and **Chhattisgarh,** all respondents reported farming as their main occupation.

East Zone

- Farmers in all the states were doing farming as the main occupation except in **Assam** where one respondent was involve in business apart from farming.

North Zone

State	Farming	Business	Service	Labour	Pensioner	Other	Non Respondents
HP	12	03	02	01	--	--	02
Haryana	22	--	01	--	--	--	00
Punjab	21	--	01	--	--	--	00
Uttarakhand	16	--	--	--	--	--	04
Total (%)	83.53	3.53	4.71	1.17	--	--	7.06

HP- Himachal Pradesh

- About 83.5% respondents of the zone were doing farming as their main occupation.
- Some of the respondents were government employees but doing farming as their secondary occupation for more earning.

South Zone

- About 96.8% respondents were doing farming as their main occupation and only 3.2% respondents were in service as their main occupation.

West Zone

State	Farming	Business	Service	Labour	Pensioner	Other	Non Respondents
Gujarat	20	--	--	--	--	--	00
Maharashtra	06	--	--	--	--	--	05
Total (%)	83.87	--	--	--	--	--	16.13

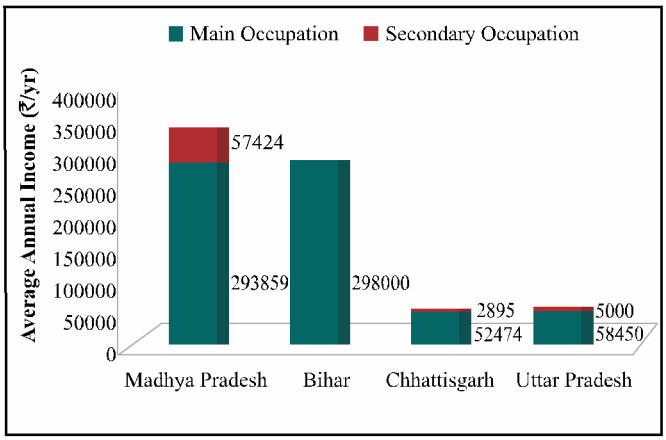
- In this zone, 83.9% respondents were doing farming as their main occupation.

2.3 Average annual income

Central Zone

State	Average Annual Income (in ₹/annum)
MP	351283
Bihar	298000
Chhattisgarh	55368
Uttar Pradesh	58450

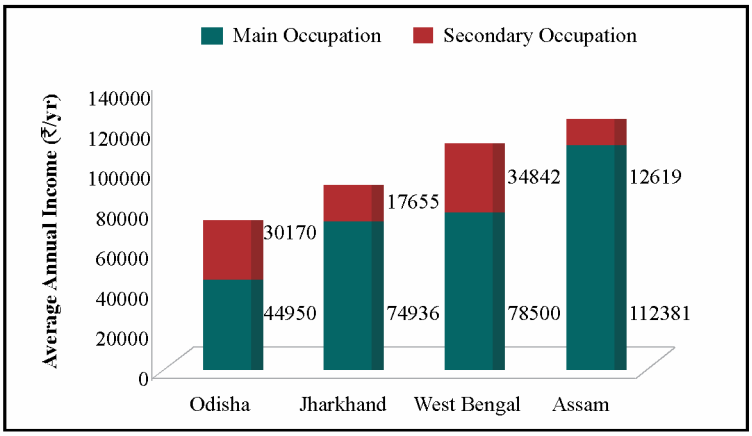
MP- Madhya Pradesh



East Zone

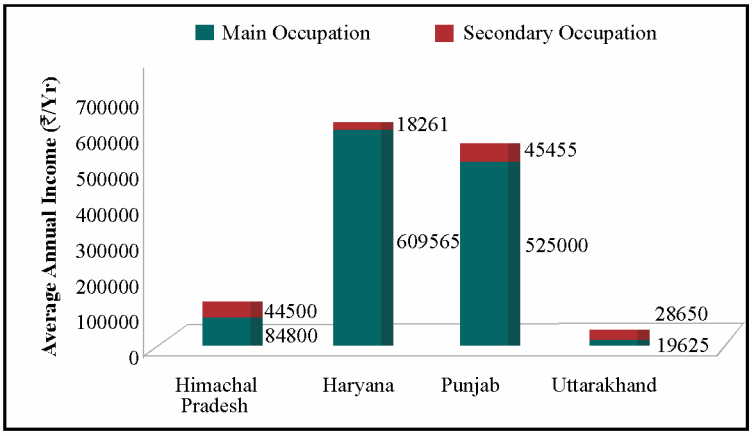
State	Average Annual Income (in ₹/annum)
Odisha	75120
Jharkhand	92591
West Bengal	113342
Assam	125000

- The effect of occupation was completely seen in the annual income of the respondents from main and secondary occupation.
- In **Odisha** and **Jharkhand**, annual income of the respondents were less as compared to other two states of the region. The reason could be their involvement as labourer which is less paid occupation as compared to other line of work.



North Zone

State	Average Annual Income (in ₹/annum)
HP	129300
Haryana	627826
Punjab	570455
Uttarakhand	48275

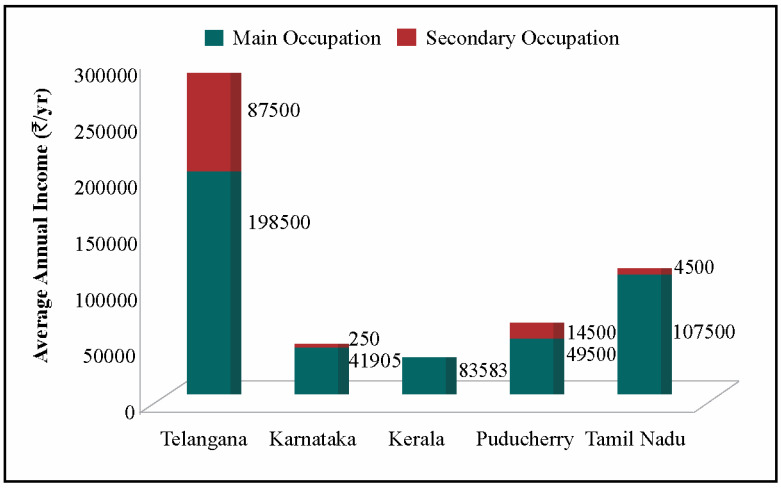


- Annual income from both the main and secondary occupation of **Haryana** state respondents was much higher than the other states of the zone.

South Zone

State	Average Annual Income (in ₹/annum)
Telangana	286000
Karnataka	42155
Kerala	33583
Puducherry	64000
Tamil Nadu	112000

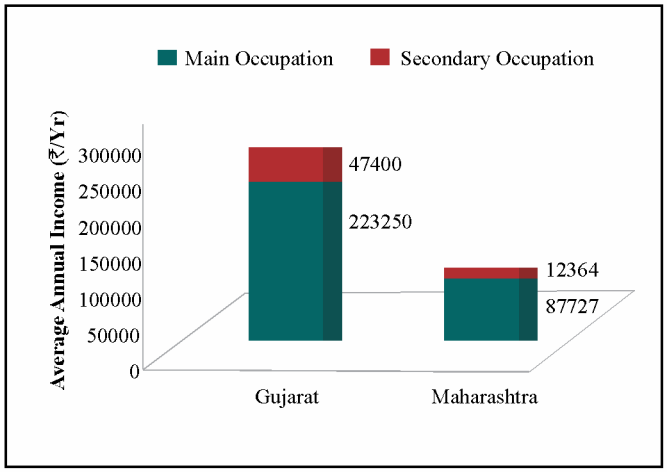
- The annual income of the respondents from **Telangana** state was higher than all other states of the zone.
- It was about 1.98 lakh per annum from main occupation and 0.87 lakh from secondary occupation which yielded total income of about 2.86 lakh per annum.
- The annual income of **Karnataka** and **Puducherry** was almost half of the other three states of the zone.



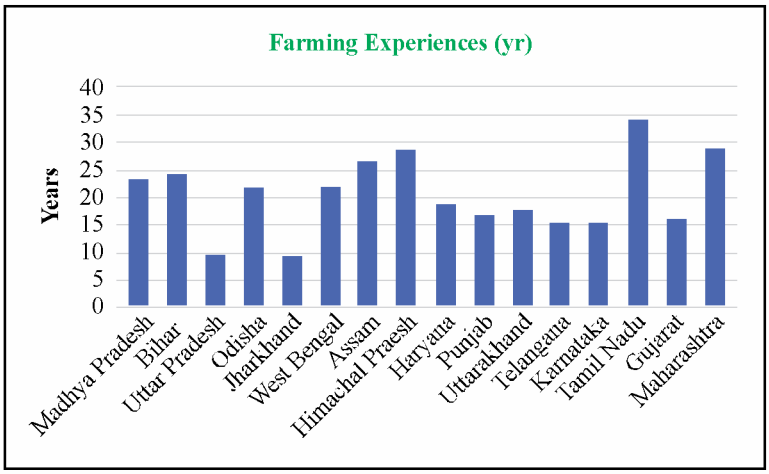
West Zone

State	Average Annual Income (in ₹/annum)
Gujarat	270650
Maharashtra	100091

- The average total annual income of the respondents from the **Gujarat** state (₹ 270650) was higher than the respondents from **Maharashtra** state (₹ 100091).



2.4 Farming experience (In Years)



- Data showed that respondents from **Jharkhand** and **Uttar Pradesh** were less experience in farming as compared to other states.
- Among all, respondents from **Tamil Nadu** state were having highest average experience of about 34.37 years, followed by **Himachal Pradesh** and **Maharashtra** as 28 years.

3. Land ownership pattern

This section describes details about the land owned by the farmer under irrigated as well as unirrigated condition. It also shows that how much total land has been owned by the respondent farmers, how much area is under cultivation, the area of cultivable wasteland and non-cultivable land, the leased-in land area as well as the area of total operational land.

Central Zone

Particulars	MP		Bihar		Chhattisgarh		UP	
	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)
Total owned land	12.61	2.25	9.77	1.5	6.10	2.3	2.62	--
Area under cultivation	15.70	--	9.77	1.5	4.99	1.25	2.4	--
Cultivable waste land	3.85	--	--	--	4.00	--	0.5	--
Non cultivable land	2.75	--	--	--	--	--	0.5	--
Leased in land	11.03	--	--	--	10.5	--	3.33	--
Total operational land	16.71	2.25	9.86	1.5	6.10	--	3.08	--

(MP-Madhya Pradesh, UP- Uttar Pradesh)

- In **Madhya Pradesh**, under irrigated condition, the cropping intensity was 93.95%.
- In **Bihar**, under un-irrigated condition, the cropping intensity was 100% as compared to irrigated (99.1%) condition.
- In **Chhattisgarh**, the cropping intensity in irrigated condition was 81.8%.
- In **Uttar Pradesh**, the cropping intensity was 78.2% under irrigated condition. It was lesser as compared to other states of the zone.

East Zone

Particulars	Odisha		Jharkhand		West Bengal		Assam	
	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)
Total owned land	1.96	1.82	1.03	1.03	6.86	2.00	4.93	12.70
Area under cultivation	1.92	1.49	1.03	1.03	6.26	2.00	4.49	13.67
Cultivable waste land	0.50	0.67	--	--	0.9	--	1.2	2.9
Non cultivable land	--	0.35	--	--	0.87	--	1.25	1.47
Leased in land	--	1.00	--	--	--	--	3.25	2.11
Total operational land	1.92	1.87	1.17	1.17	6.86	2.00	4.97	13.20

- In **Odisha**, the cropping intensity was 100% under irrigated condition.
- In **Jharkhand**, under un-irrigated condition the cropping intensity was lower (104.4%) than the irrigated condition (114.0%).
- In **West Bengal**, under un-irrigated condition the cropping intensity was lower (100.0%) than the irrigated condition (110.0%).

- In **Assam**, under un-irrigated condition, the cropping intensity was lower (96.56%) than the irrigated condition (110.69%).

North Zone

Particulars	HP		Haryana		Punjab		Uttarakhand	
	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un irrigated (in acre)	Irrigated (in acre)	Un irrigated (in acre)
Total owned land	1.33	2.38	11.26	--	14.22	--	4.05	--
Area under cultivation	1.14	1.31	10.00	--	14.72	--	4.15	--
Cultivable waste land	0.54	0.75	--	--	--	--	--	--
Non cultivable land	0.375	0.63	--	--	--	--	--	--
Leased in land	--	--	8.28	--	18.57	--	6.0	--
Total operational land	1.32	1.32	13.78	--	20.11	--	4.97	--

(HP- Himachal Pradesh)

- In **Himachal Pradesh,** cropping intensity was higher in irrigated condition (115.78 %) than in un-irrigated condition (100.76 %).
- The respondents of **Haryana** were having 137.8% cropping intensity in irrigated condition.
- In **Punjab,** cropping intensity was 136.6% in irrigated condition.
- In **Uttarakhand,** cropping intensity was 119.8% in irrigated condition.

South Zone

Particulars	Telangana		Karnataka		Kerala		Puducherry		Tamil Nadu	
	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)
Total owned land	2.8	4.11	1.5	--	3.18	2.25	4.3	--	5.5	2.5
Area under cultivation	2.8	4.08	1.5	--	6.47	4.5	4.2	--	5.4	1.25
Cultivable waste land	--	3.8	--	--	--	0.2	--	--	--	--
Non cultivable land	1.00	3.00	--	--	7.93	--	--	--	--	--
Leased in land	--	--	--	--	7.32	--	--	--	--	--
Total operational land	2.9	4.05	1.5	--	6.73	2.72	4.6	--	5.5	2.5

- In **Telangana**, under un-irrigated condition the cropping intensity was lower (99.3%) than the irrigated condition (103.6%).
- In **Karnataka**, farming was done only in irrigated condition with 100% cropping intensity.

- In **Kerala**, under un-irrigated condition the cropping intensity was lower (60.4%) than the irrigated condition (104%).
- In **Puducherry**, cultivation of crops was done only in irrigated condition with 109.5% cropping intensity.
- In **Tamil Nadu**, under un-irrigated condition, the cropping intensity was higher (200%) than the irrigated condition (102%).

West Zone

Particulars	Gujarat		Maharashtra	
	Irrigated (in acre)	Un-irrigated (in acre)	Irrigated (in acre)	Un-irrigated (in acre)
Total owned land	9.02	--	3.4	1.68
Area under cultivation	10.86	--	3.42	1.68
Cultivable waste land	--	--	--	--
Non cultivable land	--	--	--	--
Leased in land	5.16	--	--	--
Total operational land	11.35	--	3.42	1.68

- In **Gujarat**, under irrigated condition, the cropping intensity was 95.7%.
- In **Maharashtra**, under both (irrigated and un-irrigated) condition the cropping intensity was 100%.

4. Cropping pattern adopted by farmers

The present section describes the cropping pattern (season-wise) followed by the respondent farmers during *Kharif*, *Rabi* and summer season. The information is provided under both conditions *i.e.* before intervention and after intervention. It includes the information on area (irrigated or unirrigated), yield and sale price of the crops in both the situation *i.e.* before and after the intervention which ultimately revealed the economic upliftment of the farmers after the adoption of weed management technologies, if any.

Central Zone

Madhya Pradesh

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Kharif										
Rice	13.50	2.00	11.10	7.00	1097	14.40	2.00	17.47	11.00	1324
Blackgram	6.26	1.33	2.88	3.00	3090	7.55	1.33	4.20	5.00	4500
Soybean	11.33	1.00	4.60	--	2075	13.15	--	6.69	--	2555
Greengram	5.37	--	3.14	--	2250	11.62	--	3.57	--	3875
Pigeonpea	4.9	--	2.9	--	2700	5.3	--	4.25	--	4600
Maize	--	1.00	--	5.00	1200	--	1.00	--	10.00	1400
Sesamum	1.00	1.00	1.00	2.5	4333	3.00	1.00	5.00	4.00	4667
Pearlmillet	5.42	--	5.92	--	1050	10.28	--	8.57	--	1060
Groundnut	11.00	3.00	6.14	7.00	2714	9.5	3.0	8.28	8.00	2875
Sorghum	3.16	--	6.33	--	1200	2.23	--	8.33	--	1200
Rabi										
Wheat	13.05	1.00	12.31	8.5	1169	14.25	1.00	17.93	12.00	1467
Chickpea	6.2	--	8.4	--	2167	4.5	--	11.4	--	2400
Potato	2.5	--	81.25	--	800	3.25	--	98.75	--	800
Mustard	1.00	1.5	2.5	3.5	3000	1.00	1.5	3.5	5.00	3000
Sesamum	--	2.00	--	2.00	4000	--	2.00	--	4.00	4000
Summer										
Blackgram	3.00	--	3.00	--	4000	3.00	--	5.00	--	6000
Green gram	2.00	--	2.00	--	3500	7.5	--	13.5	--	5000
Sugarcane	--	--	--	--	--	10.00	--	325.00	--	225
Zaid/Other										
Vegetables	-	0.5	-	-	-	0.5	-	-	-	-
Lentil	5	-	5	-	4000	-	-	-	-	-
Pigeonpea	1	-	2.25	-	2333	1	-	4.00	-	3833
Sugarcane	-	-	-	-	-	25	-	300	-	225
Sorghum	10	-	8	-	100	-	-	-	-	-
Maize	-	-	-	-	-	10	-	18	-	1150
Green pea	5	-	14	-	300	-	-	23	-	750

- In **Madhya Pradesh**, rice, soybean and groundnut were important crops grown by the respondents.
- The area of rice and soybean increased after the intervention of weed management technologies and also the yield of all crops grown in the season.

- The yield of rice and soybean increased by 6.37 and 2.09 q/acre in irrigated condition.
- High sale price of the produce after intervention indicates the production of good quality seed.
- In *Rabi* season, wheat and chickpea were the major crops grown in the state and the yield increased by 5.62 and 3.0 q/acre respectively after the adoption of weed management technologies.
- Respondents of the state were growing blackgram during summer season and its yield too increased by 2 q/acre in irrigated condition after the intervention.

Bihar

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
					Kharif					
Rice	9.77	1.5	14.19	10.00	1250	9.77	1.5	17.38	11.5	1250
					Rabi					
Wheat	9.77	1.5	15.45	12.5	1300	9.77	1.5	18.57	14.00	1300
					Summer					
Greengram	4.38	--	4.55	--	3500	4.38	--	5.69	--	3500

- In **Bihar**, rice was the major crop in *Kharif* season and wheat in *Rabi*.
- The respondents were growing them in irrigated as well as in un-irrigated condition.
- The yield of rice crop increased by 3.19 q/acre in irrigated and 1.5 q/acre in un-irrigated condition after adopting weed management technologies.
- The yield of wheat also increased by 3.12 q/acre in irrigated and 1.5 q/acre in un-irrigated condition.
- The respondents of the zone also grew greengram in summer season in irrigated condition and with the help of weed management technologies they could increase crop yield by 1.14 q/acre.

Chhattisgarh

Crops	Before intervention (*Kharif*)					After intervention (*Kharif*)				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un-irrigated	Irrigated	Un- irrigated	
Rice	5.42	--	11.5	--	1350	5.5	--	15.83	--	1350

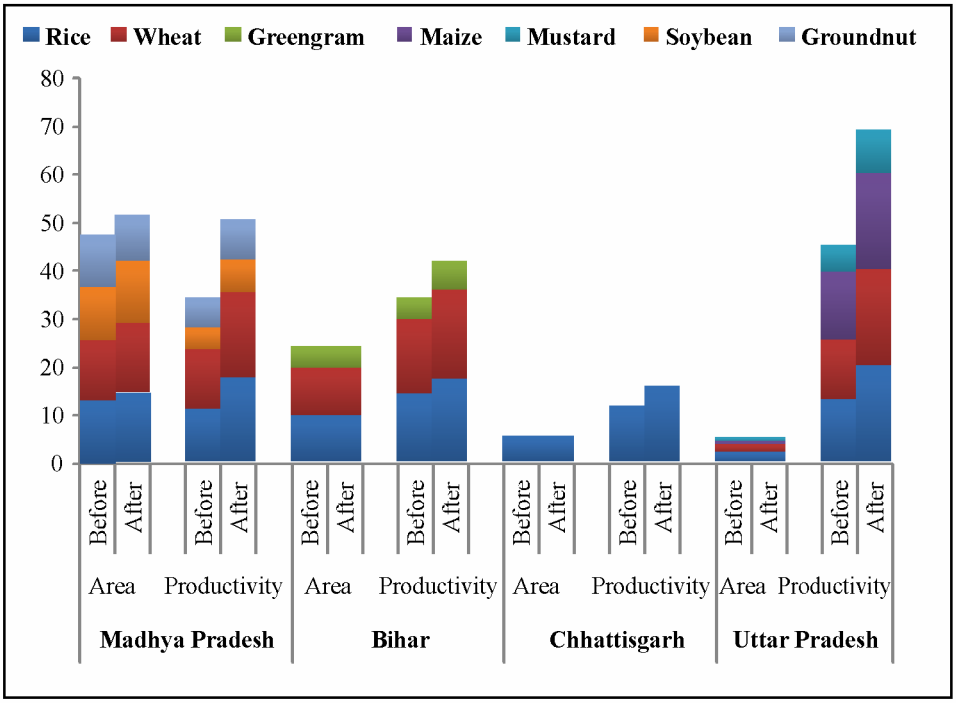
- **Chhattisgarh** is known as the **bowl of rice** and only rice was cultivated during *Kharif* season in irrigated condition.
- The yield of rice crop increased by 4.33 q/acre after the adoption of weed management technologies.

Uttar Pradesh

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un-irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Kharif										
Rice	1.97	--	12.95	--	1194	2.03	--	19.95	--	1194
Maize	0.58	--	14.00	--	875	0.56	--	19.81	--	875
Rabi										
Wheat	1.73	--	12.55	--	1300	1.71	--	20.15	--	1329
Chickpea	0.42	--	4.29	--	4000	0.44	--	6.34	--	4092
Mustard	0.85	--	5.62	--	3540	0.85	--	9.1	--	3600
Potato	0.50	--	60.00	--	600	0.5	--	120.00	--	600
Summer										
Mentha	1.00	--	28.33	--	800	1.00	--	36.66	--	800

- In **Uttar Pradesh**, respondents were growing rice and maize during *Kharif* season only in irrigated condition. After adoption of weed management technology yield of rice and maize increased by 7.0 and 5.8 q/acre respectively.
- In *Rabi* season, wheat, chickpea, mustard and potato were also grown by the respondents only in irrigated condition.
- Yield of all growing crops increased after the intervention of weed management technologies.
- The effect of adoption of weed management technologies was more observed in wheat and potato, and it increased by 7.6 and 60 q/acre respectively.
- Respondents of the state were also growing mentha during summer season in irrigated condition and they got 8.3 q/acre more yield than before adoption.

Effect on yield of crops after adoption of weed management technologies



East Zone

Odisha

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Kharif										
Rice	1.8	1.73	15.92	12.46	1110	1.92	3.78	19.64	16.01	1115
Rabi										
Groundnut	1.75	2.00	6.87	2.5	3800	1.75	1.17	9.12	5.25	3800
Maize	1.5	--	4.2	--	4150	1.5	--	5.00	--	4150
Blackgram	1.5	--	4.2	--	4150	1.5	--	5.00	--	4150
Summer										
Greengram	2.00	--	1.00	--	4000	2.00	--	1.4	--	4000

- In **Odisha**, rice was the sole crop grown in the *Kharif* season.
- The area under rice, grown by the respondents of the state increased by 0.12 acre (irrigated) and 2.05 acre (un-irrigated) after the intervention of the weed

management technologies. Yield also increased from 15.92 to 19.64 q/acre in irrigated condition.

- In *Rabi* season, they were growing groundnut, maize and blackgram under irrigated condition whereas groundnut was also grown in un-irrigated condition.
- The area under groundnut crop decreased by 0.83 acre under un-irrigated condition after the intervention of weed management technologies. Slight increase in the yield of these crops were observed after intervention.
- In summer, only greengram was grown by the respondents of the **Odisha** and slight increase was also observed in the yield (0.4 q/acre).

Jharkhand

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Kharif										
Rice	1.20	1.64	15.16	14.35	1146	1.25	2.03	17.16	19.19	1200
Maize	--	0.71	--	8.83	938	--	0.58	--	12.00	1000
Rabi										
Potato	0.81	--	42.5	--	920	1.00	--	65.00	--	920
Tomato	0.37	0.75	30.00	18.00	1500	0.5	0.5	55.00	47.00	1500
Brinjal	0.5	0.75	50.00	20.00	1333	0.5	0.5	60.00	40.00	1333
Okra	--	0.5	--	23.33	2000	--	--	--	--	--
Onion	0.1	--	50.00	--	1500	--	--	--	--	--
Summer										
Brinjal	0.25	--	20.00	--	1000	--	--	--	--	--

- In **Jharkhand**, rice was the important crop of the zone. Both area (0.5 & 0.39 acre) and yield (2.0 & 4.48 q/acre) increased under irrigated and un-irrigated conditions, respectively.
- In *Rabi* season, respondents grew only the vegetable crops viz. potato, tomato, brinjal, okra and onion.
- The area of potato and tomato increased by 0.19 and 0.13 acre respectively in irrigated condition. A steep increase was observed in the yield of these crops.

West Bengal

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Kharif										
Rice	6.36	2.00	20.36	20.00	1165	6.26	2.00	23.21	24.00	1220
Rabi										
Mustard	1.12	--	4.58	--	4000	1.36	--	5.83	--	4183
Potato	1.75	--	75.22	--	500	2.03	--	95.00	--	556
Onion	1.12	--	55.00	--	600	1.25	--	72.5	--	650
Summer										
Summer rice	5.04	--	24.36	--	1264	5.63	--	27.90	--	1346

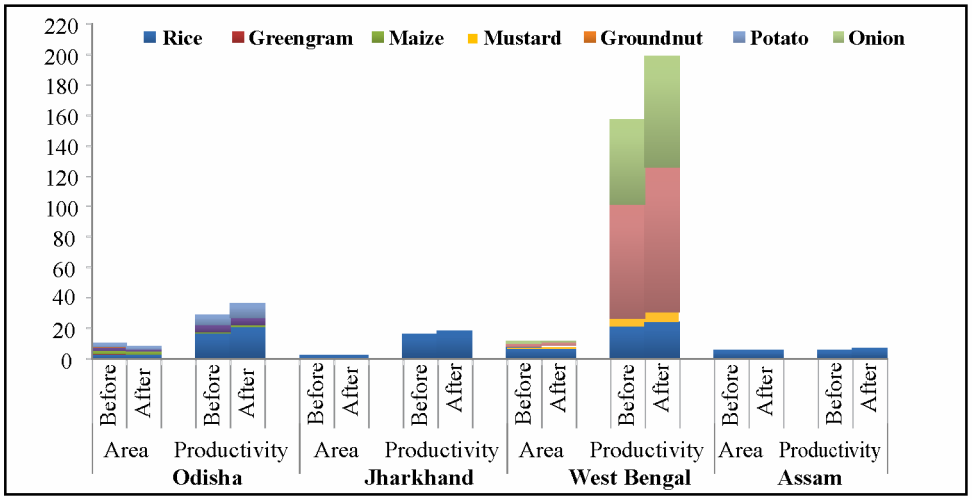
- In **West Bengal,** rice was the sole crop grown by the respondents in *Kharif* season.
- Rice yield increased by 2.85 q/acre showed the effect of weed management technologies adopted by farmers.
- In *Rabi* season, respondents of the state were growing mustard, potato and onion.
- The crops in *Rabi* season were grown only in irrigated condition and encouraging results were obtained after the intervention of weed management technologies in terms of increase in area and yield of the crops.
- Area was increased by 0.24 acre in mustard, 0.28 acre in potato and 0.13 acre in onion.
- Similarly, the yield increased by 1.25 q/acre in mustard, 19.78 q/acre in potato and 17.5 q/acre in onion.
- In summer season, farmers were growing only rice crop in irrigated condition and increase in area and yield were 0.59 acre and 3.54 q/acre, respectively.

Assam

Crops	Before intervention (*Kharif*)					After intervention (*Kharif*)				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un-irrigated		Irrigated	Un-irrigated	Irrigated	Un-irrigated	
Rice	4.88	10.28	4.72	3.45	593	4.67	10.50	6.02	4.41	593

- In **Assam**, rice was only crop grown by the farmers in the *Kharif* season. Though the area in irrigated condition was decreased slightly by 0.21 acre but there was increase in the yield by 1.3 q/acre.
- In un-irrigated condition, area (increased by 0.22 acre) and yield (increased by 0.96 q/acre) showed the positive effect on income of the farmers after the intervention of the weed management technologies in rice crop.

Effect on yield of crops after adoption of weed management technologies



North Zone

Himachal Pradesh

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un-irrigated	Irrigated	Un-irrigated		Irrigated	Un-irrigated	Irrigated	Un-irrigated	
Kharif										
Rice	1.07	0.76	6.17	5.07	1082	1.07	0.76	9.26	7.4	1391
Maize	1.00	0.87	15	14	983	1.00	0.83	16	23.91	820
Rabi										
Wheat	1.05	0.82	6.97	9.33	1142	1.05	0.91	9.45	11.92	1184

- In **Himachal Pradesh**, rice and maize were major crops grown by the respondents in *Kharif* season.
- The yield in irrigated condition of both the crops increased by 3.09 q/acre in rice and 1q/acre in maize.
- In un-irrigated condition, the yield of rice and maize increased by 2.33 and 9.91 q/acre respectively.
- In *Rabi* season, wheat crop shown yield increase in both irrigated (2.48 q/acre) and un-irrigated (2.59 q/acre) conditions.

Haryana

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Kharif										
Rice	10.5	--	20.51	--	1850	11.6	--	26.22	--	1888
Cotton	6.77	--	9.07	--	2743	4.2	--	11.66	--	3817
Sugarcane	3.00	--	275.00	--	150	3.5	--	375.00	--	300
Pearlmillet	3.00	3.33	6.00	5.00	644	2.33	--	6.00	--	1125
Cowpea	5.8	3.00	5.33	5.00	3500	4.4	3.00	17.37	10.00	4110
Rabi										
Wheat	8.73	--	19.77	--	1066	9.10	--	23.55	--	1316
Chickpea	1.5	--	8.00	--	800	--	--	--	--	--
Mustard	7.75	2.00	10.14	7.5	1760	6.00	--	11.00	--	3080
Summer										
Summer rice	1.00	--	46	--	2600	1.00	--	47	--	2600
Sugarcane	4.66	--	250	--	117	8.00	--	400	--	303
Sorghum	0.83	--	175	--	--	1.00	--	300	--	800

- In **Haryana,** respondents were growing rice, cotton, sugarcane, pearlmillet and cowpea in the *Kharif* season in irrigated condition.
- Rice was the major crop of the state with more area under cultivation than other crops.
- The area of rice crop increased by 5.71 q/acre after intervention of Weed Management technologies.
- All the rabi season crops (wheat, chickpea & mustard) were grown under irrigated condition and the yield of wheat and mustard increased by 3.78 and 0.86 q/acre, respectively.

Punjab

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- Irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Kharif										
Rice	23.00	--	24.8	--	--	17.75	--	26.66	--	--
Cotton	4.00	--	8.00	--	--	4.5	--	11.00	--	--
Rabi										
Wheat	18.12	--	18.4	--	--	22.8	--	20	--	--
Potato	2.00	--	100	--	--	7.00	--	125	--	--
Summer										
Vegetables	3.00	--	--	---	--	7.00	--	--	--	--

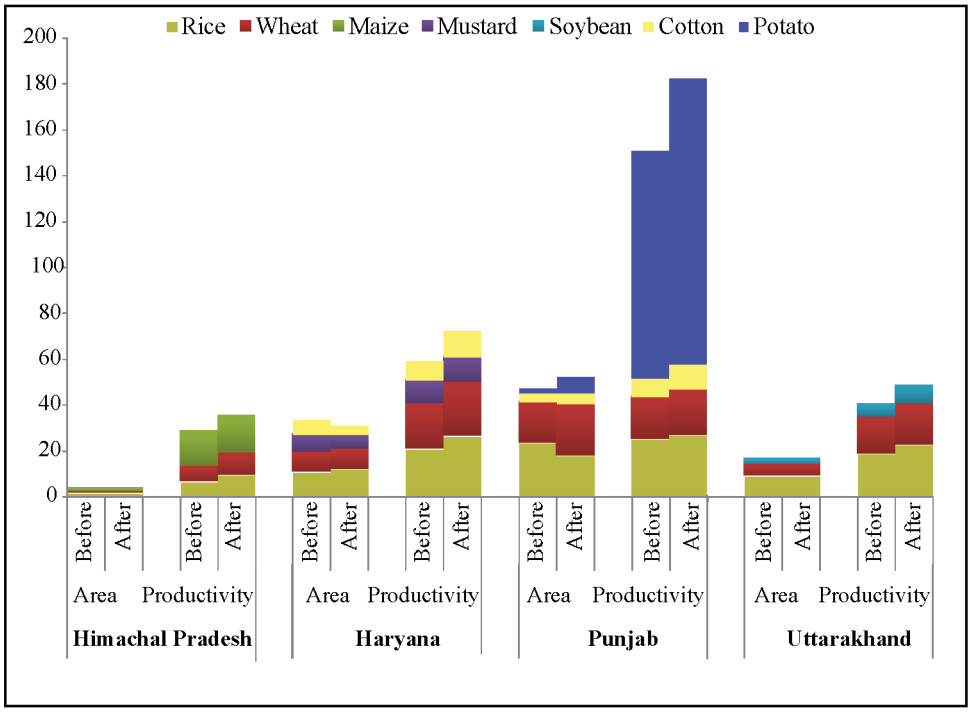
- In **Punjab**, average area of rice crop showed slight decrease by 5.25 acre after the intervention of weed management technologies but the yield increased by 1.86 q/acre.
- In *Rabi* season, respondents of the state were growing wheat and potato in irrigated conditions only and yield of wheat and potato increased by 1.6 and 25 q/acre respectively, after the adoption of weed management technologies.
- Respondents were also growing vegetables in summer season. Due to the adoption of weed management technologies, they were able to control weeds in vegetables which helped subsequently in increase in the area of vegetable cultivation.
- Sale price of the product were not shared by the respondents.

Uttarakhand

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Kharif										
Rice	8.64	--	18.64	--	1286	8.64	--	22.42	--	1286
Soybean	2.70	--	5.75	--	2983	2.65	--	7.75	--	3000
Rabi										
Wheat	4.97	--	15.76	--	1340	5.08	--	17.92	--	1347

- In **Uttarakhand**, rice and soybean crops were found as the main crops of the *Kharif* season and yield of these crops increased by 3.78 and 2 q/acre in irrigated condition, respectively, after the adoption of Weed Management technologies.
- The area and yield of wheat was significantly influenced by the weed management technologies and yield increase of 2.16 q/acre was observed in the season.

Effect on yield of crops after adoption of weed management technologies



South Zone

Telangana

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- Irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Kharif										
Rice	2.01	1.00	22.85	8.00	1750	1.66	1.00	26.6	8.00	1725
Maize	1.00	--	25.00	--	1500	1.00	--	30	--	1200
Cotton	2.00	3.5	5.00	6.00	3650	--	--	--	--	--
Rabi										
Chickpea	1.00	--	5.00	--	1800	--	--	--	--	--
Tomato	0.5	--	15.00	--	2500	0.5	0.5	18.00	9.00	2500
Maize	2.00	1.00	16.00	14.00	1050	2.00	1.00	17.00	13.00	400
Brinjal	0.5	--	10.00	--	1000	0.5	0.5	12.00	9.00	1200
Okra	0.5	--	10.00	--	600	0.5	--	12.00	--	500

- In **Telangana**, rice, maize and cotton were mostly grown by the respondents in *Kharif* season.
- In *Kharif* season, area of irrigated rice slightly decreased (0.35 acre) but there was increase in the yield (3.75 q/acre) after the intervention of weed management technologies.
- In *Rabi* season, respondents were growing chickpea, tomato, maize, brinjal and okra in irrigated condition.
- It was found that there was an increase in yield of tomato (3 q/acre), maize (1 q/acre) and brinjal (2 q/acre) after the adoption of weed management technologies which ultimately increased the income of the farmers.

Karnataka

Crops	Before intervention (*Kharif*)					After intervention (*Kharif*)				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Rice	1.5	--	17.16	--	1200	1.00	--	19.66	--	1250
Sugarcane	1.10	--	286.84	--	99	1.02	--	307.26	--	99

- In **Karnataka**, respondents were growing only rice and sugarcane in *Kharif* season.
- The effect of weed management technologies was observed in the yield of the crops grown.
- Though the area decreased, the yield of irrigated rice and sugarcane increased by 2.5 and 20.4 q/acre respectively.

Kerala

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un- irrigated	Irrigated	Un- irrigated		Irrigated	Un- irrigated	Irrigated	Un- irrigated	
Rice (*Kharif*)	1.65	8.00	20.00	40.00	1800	1.65	8.00	25.00	50.00	1900
Rice (*Rabi*)	7.33	1.5	22.7	5.00	1800	7.68	1.5	29.8	7.00	1900

- In **Kerala**, only rice was grown in both the seasons (*Kharif* and *Rabi*) and in both (irrigated and un-irrigated) conditions.
- In *Kharif* season, the rice yield increased by 5 q/acre in irrigated and 10 q/acre in un-irrigated condition.

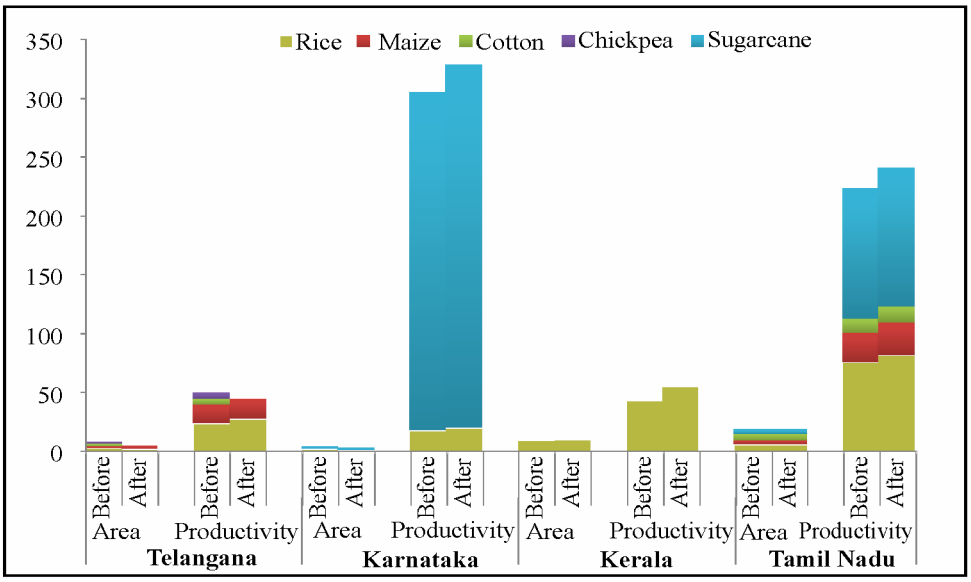
- In the *Rabi* season too, the effect was seen on the rice yield which increased by 7 q/acre in irrigated and 2 q/acre in un-irrigated condition.

Tamil Nadu

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un-irrigated	Irrigated	Un-irrigated		Irrigated	Un-irrigated	Irrigated	Un-irrigated	
Kharif										
Rice	5.00	--	75.00	--	1800	5.00	--	81.00	--	1800
Maize	3.00	--	80.00	--	1300	3.00	--	84.00	--	1300
Cotton	5.00	--	12.00	--	3200	5.00	--	13.50	--	3200
Sugarcane	4.00	--	110.00	--	200	4.00	--	117.00	--	200
Onion	2.00	--	10.00	--	10000	2.00	--	15.00	--	20000
Turmeric	4.00	--	20.00	--	3275	4.00	--	22.00	--	3275
Brinjal	2.5	--	250.00	--	1100	2.5	--	267.50	--	1100
Tomato	2.5	--	300.00	--	509	2.5	--	320.00	--	509
Rabi										
Rice	5.00	--	60.00	--	1800	5.00	--	65.00	--	1800
Groundnut	--	1.00	--	4.00	20000	--	1.00	--	5.00	25000
Maize	4.00	--	25.00	--	900	4.00	--	28.00	--	900
Tapioca	2.00	--	240.00	--	1000	2.5	--	295.00	--	1500
Chilli	1.00	--	50.00	--	1400	1.00	--	53.00	--	1400
Summer										
Maize	3.00	--	30.00	--	1000	3.00	--	34.00	--	1000
Groundnut	--	2.00	--	12.00	20000	--	3.00	--	16.00	25000

- In **Tamil Nadu**, respondents were growing crops in all three seasons of the year and in irrigated condition only.
- The yield increased in almost all the crops grown in the season, after adoption of weed management technologies. It increased by 6.0 q/acre in rice, 4.0 q/acre in maize, 1.5 q/acre in cotton, 7.0 q/acre in sugarcane, 5.0 q/acre in onion, 2.0 q/acre in turmeric, 17.5 q/acre in brinjal and 20.0 q/acre in tomato.
- In *Rabi* season, rice, maize, tapioca and chilli crops were grown by the respondents in irrigated condition and groundnut in un-irrigated condition.
- The effect of weed management can be seen in the yield of the crops as the yield increased by 5 q/acre in rice, 1 q/acre in groundnut, 3 q/acre in maize, 55 q/acre in tapioca and 3 q/acre in chilli.
- During summer, maize and groundnut were grown by the respondents and yield increase of 4 q/acre in maize under irrigated condition and 4 q/acre in groundnut under un-irrigated condition were observed.

Effect on yield of crops after adoption of weed management technologies



West Zone

Gujarat

Crops	Before intervention					After intervention				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un-irrigated	Irrigated	Un-irrigated		Irrigated	Un-irrigated	Irrigated	Un-irrigated	
Kharif										
Rice	9.14	--	14.00	--	1096	9.5	--	16.5	--	1229
Vegetables	1.5	--	40.00	--	800	2.00	--	50.00	--	900
Soybean	0.5	--	9.00	--	--	--	--	10.00	--	--
Maize	1.00	--	10.00	--	1200	--	--	--	--	1250
Cotton	9.00	--	11.00	--	5000	11.00	--	13.00	--	4000
Groundnut	12.00	--	8.00	--	2800	8.00	--	13.00	--	2800
Turmeric	6.00	--	45.00	--	3000	6.00	--	50.00	--	3200
Jawar	2.00	--	15.00	--	1000	2.00	--	16.00	--	1000
Banana	1.25	--	155.00	--	950	1.25	--	200.00	--	1000
Castor	2.16	--	8.00	--	3500	2.16	--	10.00	--	3500
Rabi										
Wheat	7.64	30.00	12.71	5.00	1406	8.73	30.00	14.96	6.00	1544
Chickpea	1.00	--	5.00	--	2500	--	--	14.00	--	2600
Potato	4.00	--	130.00	--	650	4.00	--	150.00	--	550
Tomato	5.5	--	90.00	--	425	11.25	--	112.5	--	225
Maize	3.5	--	12.00	--	--	--	--	--	--	--
Tobacco	3.8	--	13.4	--	3500	3.8	--	15.4	--	4250
Chikori	3.5	--	25.00	--	400	3.5	--	30.00	--	400
Coriander	1.00	--	40.00	--	800	1.00	--	50.00	--	600
Cumin	5.00	--	2.5	--	12400	5.00	--	3.5	--	13000
Summer										
Vegetables	3.25	--	55.00	--	650	2.75	--	62.5	--	700
Bajra	3.42	--	15.14	--	1000	3.28	--	17.28	--	1058

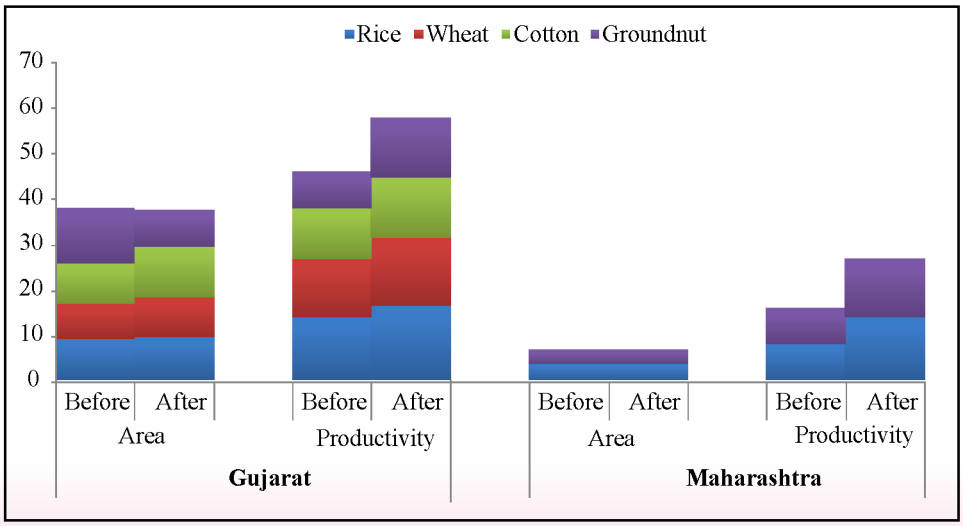
- Respondents from **Gujarat** state grow many crops throughout the year in all three season mainly in irrigated condition.
- The yield of cotton and groundnut increased by 2 and 5 q/acre, respectively after the adoption of weed management technologies.
- In *Rabi* season, wheat was the major crop and it was grown in irrigated as well as in un-irrigated condition and its yield increased by 2.25 q/acre in irrigated condition after adoption of technologies.

Maharashtra

Crops	Before intervention (*Kharif*)					After intervention (*Kharif*)				
	Area (acre)		Yield (q/acre)		Sale price (₹/q)	Area (acre)		Yield (q/acre)		Sale price (₹/q)
	Irrigated	Un-irrigated	Irrigated	Un-irrigated		Irrigated	Un-irrigated	Irrigated	Un-irrigated	
Rice	3.8	1.71	8.00	7.42	1300	3.8	2.5	14.00	12.43	1300
Groundnut	2.83	--	7.66	--	8000	2.83	--	12.66	--	8000

- In **Maharashtra**, rice and groundnut were the important crops grown by the respondents.
- The yield of rice increased by 6 q/acre in irrigated condition and 5 q/acre in un-irrigated condition after the adoption of weed management technologies.
- The yield of groundnut also increased by 5 q/acre in irrigated condition.

Effect on yield of crops after adoption of weed management technologies



5. Access to weed management technologies from different agencies

Different agencies in the country are working for the dissemination of the weed management technologies among the farmers. Therefore, information was collected on such agencies which are actively involved in these activities. Thus, this section describes the name of agencies from where information was received; frequency of contact; type of information received; quality of information; whether received information was tried / adopted by the respondent; Reasons for not adopting the practice. Also, any suggestions for improvement in extension servies were also included in the questionnaire. Some of the agencies included in the study are through visit to DWR/DWR centres / ICAR Institute/SAUs, participation in OFR/demostration as progressive farmers conducted by herebicides company and other agency, Krishi Vigyan Kendra; other extension functionaries / State line Department/ NGO's as Progressive/ Achiever farmer, Kisan Mobile Seva; TV/ Radio/Newspaper literature; and Private company/Local dealer/others.

Central Zone

Madhya Pradesh

S. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	75	07
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	71	05
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	04	11
4	Krishi Vigyan Kendra (KVK)	19	09
5	Other extension functionaries/State line departments/NGO's	12	06
6	Progressive/Achiever farmer	12	05
7	Kisan Mobile Seva (KMS)	51	02
8	TV/Radio/News Paper/Literature	38	02
9	Private company/Local dealer/Others	73	01

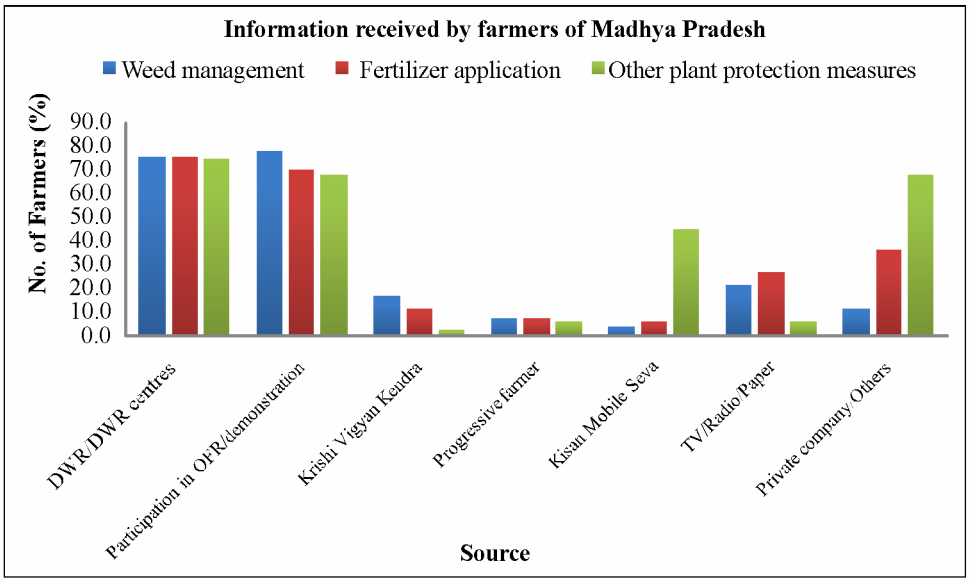
- ICAR-DWR Jabalpur and its centre at Gwalior play major role in providing the weed management related technologies to the farmers in the state. About 81.5% respondents in the state were aware and accessed weed management technologies through visiting DWR/DWR centres. They also obtained information related to weed management through the demonstration/OFR conducted by DWR/DWR centre. Some of farmers accessed the information from other sources also.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ ICAR Institute/SAUs	03	03	03	20	47	33
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/ DWR centres/SAUs etc.	06	52	05	30	37	06
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	-	-	01	03	01	-
4	Krishi Vigyan Kendra (KVK)	03	08	04	04	02	-
5	Other extension functionaries/ State line departments/NGO's	-	01	-	03	02	08
6	Progressive/Achiever farmer	03	01	01	03	07	07
7	Kisan Mobile Seva (KMS)	03	01	01	41	32	04
8	TV/Radio/News Paper/Literature	12	08	04	07	04	11
9	Private company/Local dealer/Others	01	01	02	26	62	31

- Most of the farmers contacted DWR/DWR centres on need basis and weekly they came into contact with the officials of DWR/DWR centres when any OFR/demonstrations were laid out in their fields.
- Before start of the season, they used to collect information from DWR/DWR centres on weed management technologies.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Otherplant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	69	69	68	43	01	63	13
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	71	64	62	44	--	61	13
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	03	01	-	-	-	02	-
4	Krishi Vigyan Kendra (KVK)	15	10	02	02	01	01	-
5	Other extension functionaries/State line departments/NGO's	02	04	04	02	02	08	-
6	Progressive/Achiever farmer	06	06	05	02	04	05	01
7	Kisan Mobile Seva (KMS)	03	05	41	04	04	23	43
8	TV/Radio/News Paper/Literature	19	24	05	10	12	19	19
9	Private company/Local dealer/Others	10	33	62	03	02	57	12

- Farmers collected information on weed management (75%), fertilizer management (75%) and other plant protection measures (74%) from visit to DWR/DWR centre and also through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centre.
- They also got information on farm machinery (47.8%) and improved seed variety (66.3%) from these centres.



Sr. No.	Source	Quality of information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/ SAUs	72	03	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	68	03	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	03	01	00
4	Krishi Vigyan Kendra (KVK)	13	06	-
5	Other extension functionaries/State line departments/NGO's	04	07	00
6	Progressive/Achiever farmer	06	07	00
7	Kisan Mobile Seva (KMS)	09	42	00
8	TV/Radio/News Paper/Literature	08	28	01
9	Private company/Local dealer/Others	05	65	03

- About 78.3% respondents felt the quality of information good which were obtained from DWR/DWR centres/ICAR Institutes/SAUs.

Sr. No.	Source	Received information tried by farmers	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	75	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	70	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	04	00
4	Krishi Vigyan Kendra (KVK)	19	01
5	Other extension functionaries/State line departments/NGO's	11	00
6	Progressive/Achiever farmer	12	00
7	Kisan Mobile Seva (KMS)	50	00
8	TV/Radio/News Paper/Literature	27	10
9	Private company/Local dealer/Others	72	01

- 81.5% respondents tried the technologies in their fields which they received from DWR/DWR centres/ ICAR Institute/SAUs. Many farmers (50%) also got and tried the information in their fields obtained through Kisan Mobile Seva.

Sr. No.	Source	Recommended practice has been adopted	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	73	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	69	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	04	00
4	Krishi Vigyan Kendra (KVK)	19	01
5	Other extension functionaries/State line departments/NGO's	09	02
6	Progressive/Achiever farmer	12	00
7	Kisan Mobile Seva (KMS)	47	02
8	TV/Radio/News Paper/Literature	29	08
9	Private company/Local dealer/Others	38	34

- 79.3% respondents adopted the recommended technologies in their crop production practices.

If not, reasons for not adopting recommended practices

Sr. No.	Source	Lack of financial resources	Non availability of inputs & physical resources	Lack of technical advice for follow up	Social fear	Not useful
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	01	02	07	--	82
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	01	01	04	--	86
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	--	--	--	91
4	Krishi Vigyan Kendra (KVK)	04	03	07	01	78
5	Other extension functionaries/State line departments/NGO's	01	01	02	--	88
6	Progressive/Achiever farmer	01	01	01	--	89
7	Kisan Mobile Seva (KMS)	03	01	07	--	84
8	TV/Radio/News Paper/Literature	05	05	15	02	71
9	Private company/Local dealer/Others	09	02	34	04	56

- Farmers mentioned many constraints for non-adoption of recomended technologies.
- Lack of technical advice for follow up was the main technical reason behind the non-adoption of recommended practices.

Sr. No.	Source	Suggestions if any for improvement in extension services				Non Respondents
		Improvement in quality of information	Timeliness of information	Increase in frequency of demonstration	Others	
1	Visit to DWR/DWR centres/ ICAR Institute/SAUs	16	01	16	02 (Extension of knowledge on latest technologies)	62
2	Participation in OFR/ demonstration as progressive farmer conducted by DWR /DWR centres/SAUs etc.	18	00	33	01	46
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	--	01	01 (Require more information)	89
4	Krishi Vigyan Kendra (KVK)	02	01	11	04	74
5	Other extension functionaries/ State line departments/NGO's	02	01	02	02 (Require good quality service)	86
6	Progressive/Achiever farmer	05	03	03	01	83
7	Kisan Mobile Seva (KMS)	26	03	02	02 (Require more perfect information, more attention)	60
8	TV/Radio/News Paper/Literature	09	03	04	09	69
9	Private company/Local dealer/ Others	42	09	03	00	48

- To improve the extension services in the state, most of respondents suggested to improve the quality of information as well as to increase the frequency of demonstrations.

Bihar

- All the respondents in the state accessed weed management technologies through visiting DWR/DWR centres/ICAR Institute/SAUs, through participation in demonstration as progressive farmer conducted by Herbicides Company and any other agency and also through KVK.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR ICAR Institute/ SAUs	00	00	05	15	00	00
2	Participation in OFR/ demonstration as progressive farmer conducted by DWR/ DWR centres/SAUs etc.	00	00	00	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	14	06	00	00
4	Krishi Vigyan Kendra (KVK)	00	01	10	09	00	00

- Farmers contacted DWR/DWR mainly seasonal and/or monthly basis and they also got information through participation in demonstration as progressive farmer conducted by Herbicides Company and any other agency monthly and sometimes seasonally.
- Before start of the season, they used to collect information from DWR/DWR centres/ICAR Institute/SAUs and herbicide company on weed management technologies.
- All respondents felt that the quality of information obtained from these sources was of good quality.
- They tried and adopted the information themselves.
- Since they all adopted the recommended technologies so they did not mention any reason for non-adoption of technologies.

Chhattisgarh

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	01	16
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	19	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	03	00
4	Krishi Vigyan Kendra (KVK)	17	00
5	Other extension functionaries/State line departments/NGO's	00	12
6	Progressive/Achiever farmer	01	00
7	Kisan Mobile Seva (KMS)	17	00
8	TV/Radio/News Paper/Literature	04	00
9	Private company/Local dealer/Others	00	00

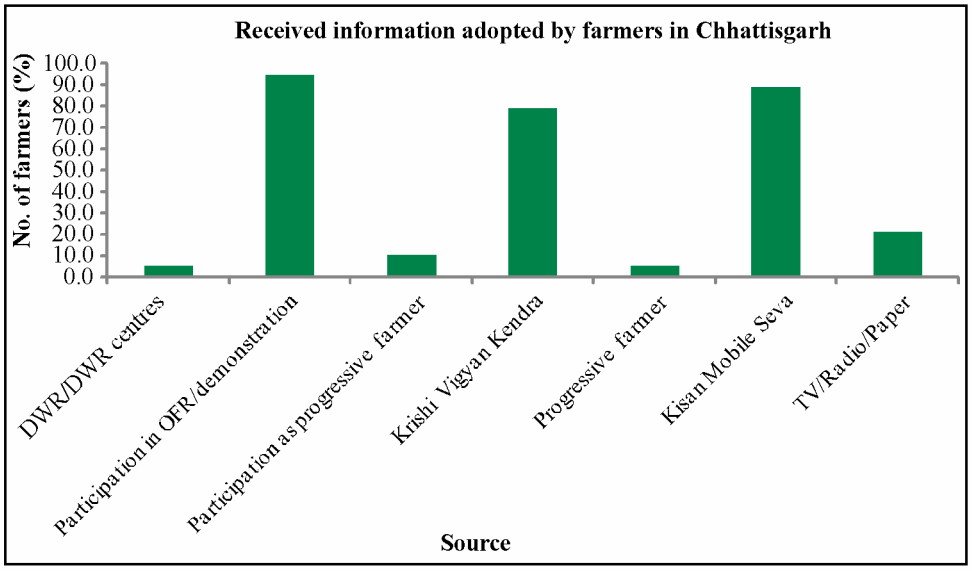
- In Chhattisgarh, all respondents (19) accessed new technologies through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centers/SAUs. And 17 respondents also obtained information through Krishi Vigyan Kendra (KVK) and Kisan Mobile Seva.
- Some of them also got information from TV/Radio/News Paper/Literature.
- Maximum respondents (90%) of the state received the information daily through Kisan Mobile Seva.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ ICAR Institute/ SAUs	01	01	01	01	01	01	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/ DWR centres/SAUs etc.	19	19	19	19	19	19	17
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	01	02	01	01	01	01
4	Krishi Vigyan Kendra (KVK)	18	16	16	16	16	16	15
5	Other extension functionaries/ State line departments/NGO's	00	00	00	00	00	00	00
6	Progressive/Achiever farmer	01	01	01	01	01	01	01
7	Kisan Mobile Seva (KMS)	17	16	16	16	16	17	15
8	TV/Radio/News Paper/Literature	04	03	03	03	03	03	03
9	Private company/Local dealer/Others	00	00	00	00	00	00	00

- All the respondents of the state received information on weed management, fertilizer management, plant protection measures, farm machinery, marketing aspects and improved seed varieties through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs and more than 90% of them also obtained information from Krishi Vigyan Kendra.
- All respondents felt that the information obtained from participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc., Krishi Vigyan Kendra (KVK) and through Kisan Mobile Seva were of good quality.

Sr. No.	Source	Received information tried by farmers	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/ SAUs	01	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	18	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	02	01
4	Krishi Vigyan Kendra (KVK)	15	00
5	Other extension functionaries/State line departments/ NGO's	00	00
6	Progressive/Achiever farmer	01	00
7	Kisan Mobile Seva (KMS)	17	00
8	TV/Radio/News Paper/Literature	04	00
9	Private company/Local dealer/Others	00	00

- 79-95% respondents who obtained the information from different sources, tried the same themselves.



Sr. No.	Source	Recommended practice has been adopted	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	01	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	16	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	01
4	Krishi Vigyan Kendra (KVK)	14	00
5	Other extension functionaries/State line departments/ NGO's	00	00
6	Progressive/Achiever farmer	01	00
7	Kisan Mobile Seva (KMS)	16	00
8	TV/Radio/News Paper/Literature	04	00
9	Private company/Local dealer/Others	00	00

- More than 80% respondents adopted the recommended practices obtained through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs and through Kisan Mobile Seva.
- Further, no reasons were mentioned for not adopting the improved weed management practices by non-adopter.
- All respondents suggested to increase the frequency of demonstrations conducted by DWR/DWR centres/SAUs for improvement in existing extension services.

Uttar Pradesh (UP)

- All respondents from UP obtained weed management technologies by visiting DWR/DWR centres/ICAR Institute/SAUs, through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs, Krishi Vigyan Kendra (KVK) and through TV/Radio/News Paper/Literature.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ ICAR Institute/SAUs	00	01	19	00	00	00
2	Participation in OFR/ demonstration as progressive farmer conducted by DWR/ DWR centres/SAUs etc.	00	01	19	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	00	17	00	00	00
5	Other extension functionaries/ State line departments/NGO's	00	00	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	01	19	00	00	00	00
8	TV/Radio/News Paper/Literature	20	00	00	00	00	00
9	Private company/Local dealer/ Others	00	00	00	00	00	00

- 95% respondents contacted monthly DWR/DWR centres/ICAR Institute/SAUs obtained information weekly from Kisan Mobile Seva and were getting the information on weed management through these sources where they contacted weekly or monthly.
- They were getting daily updates from TV/Radio/News paper/ literature.
- Respondents felt that the information obtained through visit to DWR/DWR centres/ICAR Institute/SAUs and during the participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs and through KMS were of good quality.
- Information obtained from the KVK was rated as satisfactory by respondents.
- The information received from DWR/DWR centres/ICAR Institute/SAUs and through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs sources were tried by all the respondents. Whereas, the information received from KVK, KMS and TV/ Radio/ Newspaper / Literature were tried by 80, 75, 75% respondents respectively.

Sr. No.	Source	Recommended practice has been adopted	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	20	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	20	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00
4	Krishi Vigyan Kendra (KVK)	17	01
5	Other extension functionaries/State line departments/NGO's	00	00
6	Progressive/Achiever farmer	01	00
7	Kisan Mobile Seva (KMS)	17	00
8	TV/Radio/News Paper/Literature	16	00
9	Private company/Local dealer/Others	00	00

- The information received from DWR/DWR centres/ICAR Institute/SAUs and through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs sources were adopted by them.
- Some information obtained from other sources *viz* Krishi Vigyan Kendra, Kisan Mobile Seva and TV/Radio/News Paper/Literature were also adopted by the respondents.
- Most of the respondents suggested to increase the frequency of demonstrations conducted by DWR/DWR centres/ICAR Institute/SAUs and Krishi Vigyan Kendra.

East Zone

Odisha

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	08	12
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	19	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	19
4	Krishi Vigyan Kendra (KVK)	18	02
5	Other extension functionaries/State line departments/NGO's	18	02
6	Progressive/Achiever farmer	00	19
7	Kisan Mobile Seva (KMS)	15	05
8	TV/Radio/News Paper/Literature	20	00
9	Private company/Local dealer/Others	03	17

- All the respondents received the information through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs, Krishi Vigyan Kendra, other extension functionaries/State line departments/NGO's, TV/Radio/News Paper/Literature and Kisan Mobile Seva.
- They were accessing all information through TV/Radio/News Paper/ Literature.
- 90% of them also accessed Krishi Vigyan Kendra and other extension functionaries/State line departments/ NGO's.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	01	01	05	01	00
2	Participation in OFR/ demonstration as progressive farmer conducted by DWR/ DWR centres/SAUs etc.	01	01	08	10	01	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00	00	01
4	Krishi Vigyan Kendra (KVK)	00	00	01	02	15	00
5	Other extension functionaries/ State line departments/NGO's	00	00	00	09	09	00
6	Progressive/Achiever farmer	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	05	00	10	00	00	00
8	TV/Radio/News Paper/ Literature	10	07	02	00	00	00
9	Private company/Local dealer/ Others	00	01	01	01	01	00

- Farmers were getting information on technologies, monthly (40%) or seasonally (50%) by participating in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs. Whereas 75% were getting on need basis from Krishi Vigyan Kendra and 50% were accessing information daily from TV/Radio/News Paper/Literature.

Sr. No	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	08	07	01	02	00	05	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	19	19	14	00	00	08	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	01	01	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	10	11	16	00	00	07	00
5	Other extension functionaries/ State line departments/NGO's	02	10	18	01	00	09	00
6	Progressive/Achiever farmer	00	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	13	12	13	00	00	01	00
8	TV/Radio/News Paper/Literature	20	19	19	00	00	01	00
9	Private company/Local dealer /Others	03	02	02	01	00	00	00

- All the respondents obtained information through TV/ Radio/ Newspaper/ Literature on weed management (100%), fertilizer management (95%) and on plant protection measures (95%).
- All respondents obtained information on weed management (100%), fertilizer management (100%) and other plant protection measures (74%) when they participated in the OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.

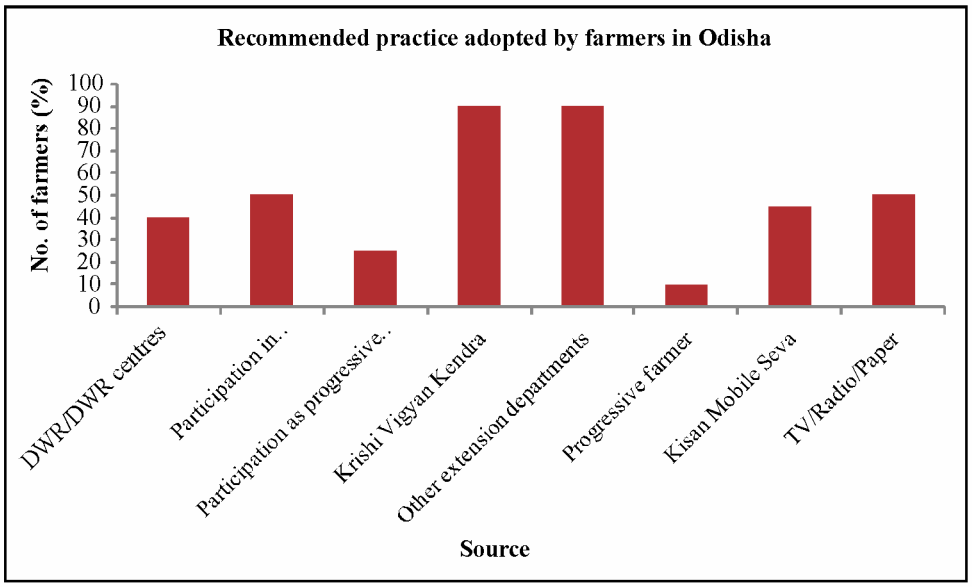
Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/ SAUs	08	01	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	18	01	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	01	01
4	Krishi Vigyan Kendra (KVK)	02	16	00
5	Other extension functionaries/State line departments/ NGO's	02	16	00
6	Progressive/Achiever farmer	01	00	00
7	Kisan Mobile Seva (KMS)	09	04	00
8	TV/Radio/News Paper/Literature	03	17	00
9	Private company/Local dealer/Others	00	03	00

- Respondents expressed that most of the information (90%) obtained through participation in OFR/demonstration conducted by DWR/DWR centres/SAUs was of good quality.
- 85% information provided by TV/Radio/News Paper/Literature was satisfactory for them.

Sr. No.	Source	Received information tried by farmers		Recommended practice has been adopted	
		Yes	No	Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	09	01	08	11
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	09	10	10	10
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	06	13	05	15
4	Krishi Vigyan Kendra (KVK)	17	01	18	02
5	Other extension functionaries/State line departments/NGO's	16	01	18	01
6	Progressive/Achiever farmer	00	16	02	07
7	Kisan Mobile Seva (KMS)	12	04	09	07
8	TV/Radio/News Paper/Literature	18	01	10	10
9	Private company/Local dealer/Others	03	16	01	10

- Information, obtained through TV/Radio/News Paper/Literature, Krishi Vigyan Kendra and other extension functionaries/State line departments/NGO's were tried by 90, 85 and 80% respondents respectively.

- Respondents adopted most of the technologies (90%) provided by Krishi Vigyan Kendra and other extension functionaries/State line departments/NGO's and 50% obtained through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.



If not, reasons for not adopting recommended practices

Sr. No.	Source	Lack of financial resources	Non availability of inputs & physical resources	Lack of technical advice for follow up	Social fear	Not useful
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	05	02	10	00	03
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	01	10	00	00	10
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	02	09	10	01	00
4	Krishi Vigyan Kendra (KVK)	02	03	00	00	15
5	Other extension functionaries/State line departments/NGO's	00	03	00	00	17
6	Progressive/Achiever farmer	01	06	06	00	07
7	Kisan Mobile Seva (KMS)	02	06	00	00	12
8	TV/Radio/News Paper/Literature	01	09	00	00	10
9	Private company/Local dealer/Others	10	00	09	00	01

- Around 50% respondents felt the lack of technical advice for follow up followed by non- availability of inputs and physical resources are the reasons for non-adoption of recommended practice.

Sr. No.	Source	Suggestions if any for improvement in extension services			
		Improvement in quality of information	Timeliness of information	Increase in frequency of demonstration	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	07	11	12	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	08	09	04	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	08	10	07	01
4	Krishi Vigyan Kendra (KVK)	08	09	00	00
5	Other extension functionaries/State line departments/NGO's	07	10	00	01
6	Progressive/Achiever farmer	09	13	01	00
7	Kisan Mobile Seva (KMS)	02	08	02	00
8	TV/Radio/News Paper/Literature	00	10	00	01
9	Private company/Local dealer/ Others	00	09	09	00

- Most of the respondents suggested to provide the information timely and to increase the frequency of demonstrations for improvement in the extension activities.
- Some of the farmers also suggested to improve the quality of information.

Jharkhand

- All the respondents of the state accessed weed management technologies through visit to DWR/DWR centres/ICAR Institute/SAUs and contacted them according to their needs and obtained information on weed and fertilizer management through visit to these places.
- All the information obtained through visit to DWR/DWR centres/ICAR Institute/SAUs was of good quality and they tried and adopted these information themselves.

West Bengal

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	20	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	05	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00
4	Krishi Vigyan Kendra (KVK)	08	00
5	Other extension functionaries/State line departments/NGO's	00	00
6	Progressive/Achiever farmer	00	00
7	Kisan Mobile Seva (KMS)	00	00
8	TV/Radio/News Paper/Literature	08	00
9	Private company/Local dealer/Others	00	00

- All respondents of the state accessed weed management technologies through visiting DWR/DWR centres/ICAR Institute/SAUs. Among them 25% accessed these technologies through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.
- And 40% of them also accessed weed management technologies through Krishi Vigyan Kendra (KVK) and TV/Radio/News Paper/Literature.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	00	01	15	04	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	00	00	05	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	00	00	01	04	03
5	Other extension functionaries/State line departments/NGO's	00	00	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	08	00	00	00	00	00
9	Private company/Local dealer/Others	00	00	00	00	00	00

- 75% and 20% respondents contacted DWR/DWR centres/ICAR Institute/ SAUs seasonally and on need basis respectively.
- 20% respondents contacted to Krishi Vigyan Kendra on need basis and 40% of them accessed these technologies daily from TV/Radio/News Paper/Literature.
- All respondents received the information on weed management through visit to DWR/DWR centres/ICAR Institute/SAUs and 25% received through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc. 20% and 15% respondents obtained the information on other plant protection measures and improved seed variety respectively from Krishi Vigyan Kendra.
- 25 and 15% respondents got information on weed management and other plant protection measures respectively from TV/Radio/News Paper/Literature.

Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	10	10	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	05	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00
4	Krishi Vigyan Kendra (KVK)	05	03	00
5	Other extension functionaries/State line departments/NGO's	00	00	00
6	Progressive/Achiever farmer	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00
8	TV/Radio/News Paper/Literature	03	05	00
9	Private company/Local dealer/Others	00	00	00

- According to 50% respondents, information received through visit to DWR/DWR centres/ICAR Institutes/SAUs was good as well as satisfactory in quality.
- 25% respondents realized that information obtained from Krishi Vigyan Kendra was of good quality whereas, 15% respondents marked them as satisfactory.

Sr. No.	Source	Received information tried by farmers		Recommended practice has been adopted	
		Yes	No	Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	09	11	20	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	02	03	05	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	08	08	00
5	Other extension functionaries/State line departments/NGO's	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00
8	TV/Radio/News Paper/Literature	07	01	08	00
9	Private company/Local dealer/Others	00	00	00	00

- Only 45% respondents tried the information obtained from DWR/DWR centres/ICAR Institute/SAUs themselves.
- 35% respondents tried the information obtained through TV/Radio/News Paper/Literature.
- All the respondents adopted the recommended technologies in their fields which were obtained through visit to DWR/DWR centres/ICAR Institute/SAUs.
- Whereas, 40% respondents adopted the recommended technologies obtained from Krishi Vigyan Kendra (KVK).

Sr. No.	Source	Suggestions if any for improvement in extension services			
		Improvement in quality of information	Timeliness of information	Increase in frequency of demonstration	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	10	10	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	02	03	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	03	00	05
5	Other extension functionaries/State line departments/NGO's	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00
8	TV/Radio/News Paper/Literature	06	02	00	00
9	Private company/Local dealer/Others	00	00	00	00

- In order to improve the extension services in the state, 50% respondents suggested to improve, the quality of information and 50% suggested to provide the information time to time by DWR/DWR centres/ICAR Institutes/SAUs.
- They (15%, 83%) also suggested Krishi Vigyan Kendra to provide the information timely and TV/Radio/ News paper/ Literature to improve the quality of information, respectively.

Assam

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	09	12
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	21	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	21
4	Krishi Vigyan Kendra (KVK)	00	21
5	Other extension functionaries/State line departments/NGO's	00	21
6	Progressive/Achiever farmer	00	21
7	Kisan Mobile Seva (KMS)	00	21
8	TV/Radio/News Paper/Literature	21	00
9	Private company/Local dealer/Others	00	21

- All the respondents in the state accessed weed management technologies through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs through and TV/Radio/News Paper/Literature.
- 43% farmers visited the DWR/DWR centres/ICAR Institute/SAUs to get the information related to crop production.
- All respondents were getting the information monthly through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs.
- Beside this, 90% were getting the information daily from TV/Radio/News Paper/Literature.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	09	09	09	08	08	08	08
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	21	21	21	02	02	20	09
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	00	00	00	00	00	00
5	Other extension functionaries/State line departments/NGO's	00	00	00	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	21	21	21	21	21	21	20
9	Private company/Local dealer/Others	00	00	00	00	00	00	00

- Information on weed management, fertilizer application, plant protection measures and improved seed variety were obtained by respondents through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs.
- Most of them (95%) also accessed information on improved seed variety from these agencies.
- 38-43% respondents also visited DWR/DWR centres/ICAR Institute/SAUs and accessed information on weed management, fertilizer application, plant protection measures and improved seed variety.
- About 95% respondents realized that information as received through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs was of good quality.
- Respondents mentioned the information as satisfactory which was obtained through TV/Radio/News Paper/Literature.
- All respondents tried and adopted the information themselves which they received through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs.

- Most of the respondents (95%) of the state were facing the problem of lack of financial resources in adopting recommended practices obtained through TV/Radio/News Paper/Literature.
- All respondents of the state suggested to increase the frequency of demonstrations conducted by DWR/DWR centres/SAUs for improvement in the extension activities and also to provide the information timely.

North Zone

Himachal Pradesh

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	13	06
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	04	07
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	06
4	Krishi Vigyan Kendra (KVK)	13	06
5	Other extension functionaries/State line departments/NGO's	04	06
6	Progressive/Achiever farmer	01	06
7	Kisan Mobile Seva (KMS)	01	06
8	TV/Radio/News Paper/Literature	15	01
9	Private company/Local dealer/Others	01	04

- 75% respondents in the state accessed weed management technologies through TV/Radio/News Paper/Literature and 65% accessed through visit to DWR/DWR centres/ICAR Institute/SAUs and Krishi Vigyan Kendra.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/ SAUs	01	00	01	09	03	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	04	00	01	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	02	06	04	03	00
5	Other extension functionaries/State line departments/NGO's	04	03	03	03	03	03
6	Progressive/Achiever farmer	01	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	01	00	00	00	00
8	TV/Radio/News Paper/Literature	10	06	04	01	02	03
9	Private company/Local dealer/Others	01	00	00	00	00	00

- 50% respondents were getting information daily from TV/Radio/News Paper/Literature and 45% respondents contacted seasonally to DWR/DWR centres/ICAR Institute/SAUs whereas, 20% were getting these information weekly while participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.

Sr. No.	Source	Type o f Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	10	10	05	03	03	05	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	02	01	01	01	01	01	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	14	14	12	02	02	03	00
5	Other extension functionaries/State line departments/NGO's	01	00	00	00	00	00	00
6	Progressive/Achiever farmer	00	01	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	01	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	11	10	11	10	10	10	01
9	Private company/Local dealer/Others	01	00	00	00	00	00	00

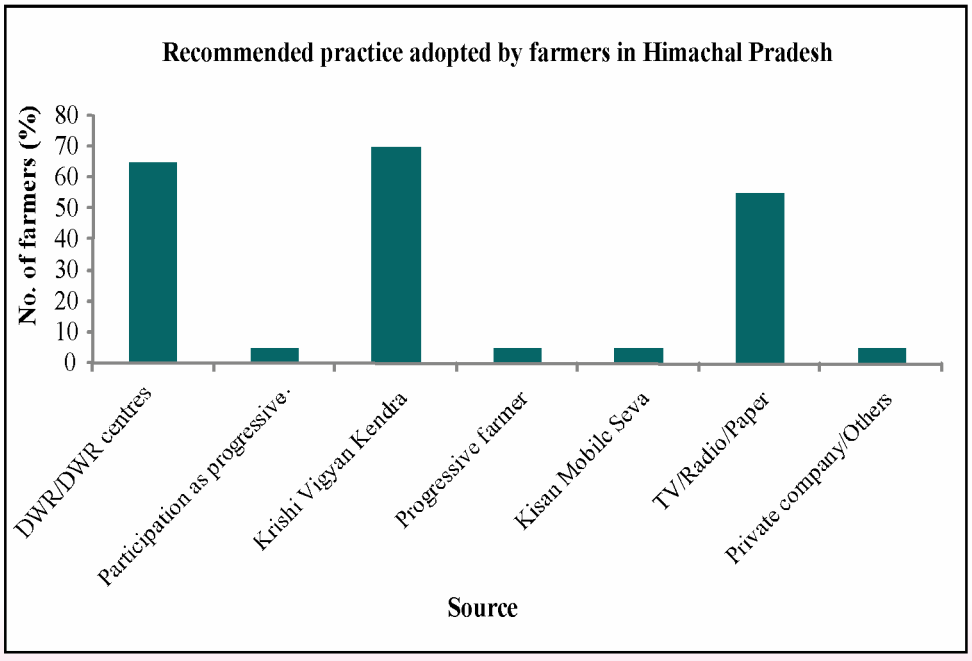
- 70% respondents accessed information on weed management and fertilizer application through Krishi Vigyan Kendra .
- 50% of them also got information on weed management and fertilizer application through visit to DWR/DWR centres/ICAR Institute/SAUs.

Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	13	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	01	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	00	00
4	Krishi Vigyan Kendra (KVK)	13	00	01
5	Other extension functionaries/State line departments/NGO's	01	00	00
6	Progressive/Achiever farmer	00	01	00
7	Kisan Mobile Seva (KMS)	01	00	00
8	TV/Radio/News Paper/Literature	09	00	02
9	Private company/Local dealer/Others	01	00	00

- 65% respondents felt the information was of good quality which was obtained from DWR/DWR centers/ICAR Institute/SAUs and Krishi Vigyan Kendra (KVK).

Sr. No.	Source	Received information tried by farmers		Recommended practice has been adopted	
		Yes	No	Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	13	00	13	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	01	00	00	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	00	01	00
4	Krishi Vigyan Kendra (KVK)	14	00	14	00
5	Other extension functionaries/State line departments/NGO's	01	00	00	01
6	Progressive/Achiever farmer	00	01	01	00
7	Kisan Mobile Seva (KMS)	01	00	01	00
8	TV/Radio/News Paper/Literature	10	01	11	01
9	Private company/Local dealer/Others	01	00	01	00

- 70% and 65% respondents tried and adopted the information received through Krishi Vigyan Kendra & from DWR/ DWR centres / ICAR Institutes / SAUs



If not, reasons for not adopting recommended practices

Sr. No.	Source	Lack of financial resources	Non availability of inputs & physical resources	Lack of technical advice for follow up	Social fear	Not useful
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	03	--	--	--	--
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	01	02	00	00	17
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	02	00	00	17
4	Krishi Vigyan Kendra (KVK)	00	05	02	00	13
5	Other extension functionaries/State line departments/NGO's	01	00	02	00	17
6	Progressive/Achiever farmer	01	00	00	00	02
7	Kisan Mobile Seva (KMS)	01	00	00	02	17
8	TV/Radio/News Paper/Literature	00	01	00	00	19
9	Private company/Local dealer/Others	01	00	00	00	17

- Among non-adopters, 15% respondents of the state were facing the problem of lack of financial resources in adopting recommended practices suggested by DWR/DWR centres/ICAR Institute/SAUs.

Sr. No.	Source	Suggestions, if any for improvement in extension services			
		Improvement in quality of information	Timeliness of information	Increase in frequency of demonstration	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	07	02	02
2	Participationin OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	00	01	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	00	00	01
4	Krishi Vigyan Kendra (KVK)	01	04	05	01
5	Other extension functionaries/State line departments/NGO's	01	00	00	04
6	Progressive/Achiever farmer	01	00	00	01
7	Kisan Mobile Seva (KMS)	01	00	00	01
8	TV/Radio/News Paper/Literature	01	02	00	01
9	Private company/Local dealer/Others	01	00	00	01

- In order to improve the extension services, 35 and 20% respondents suggested to provide the information timely by DWR/DWR centres/ICAR Institute/SAUs and Krishi Vigyan Kendra, respectively.

Haryana

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	16	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	09	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	04	02
4	Krishi Vigyan Kendra (KVK)	13	02
5	Other extension functionaries/State line departments/NGO's	06	03
6	Progressive/Achiever farmer	06	03
7	Kisan Mobile Seva (KMS)	08	00
8	TV/Radio/News Paper/Literature	18	00
9	Private company/Local dealer/Others	17	00

- 78% respondents received information on new technologies through TV/Radio/News Paper/Literature and 74% respondents accessed these information through private company/Local leader.
- About 70% respondents accessed the information through visit to DWR/DWR centres/ICAR Institute/SAUs and some of them (39%) also got through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	02	08	05	03	00
2	Participation in OFR/ demonstration as progressive farmer conducted by DWR/ DWR centers/SAUs etc.	00	00	03	03	02	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	01	00	02	02
4	Krishi Vigyan Kendra (KVK)	00	02	03	02	03	03
5	Other extension functionaries/State line departments/NGO's	00	01	01	00	01	03
6	Progressive/Achiever farmer	00	01	01	01	03	01
7	Kisan Mobile Seva (KMS)	01	01	02	01	01	00
8	TV/Radio/News Paper/ Literature	07	08	02	00	00	01
9	Private company/Local dealer/Others	01	03	02	06	05	00

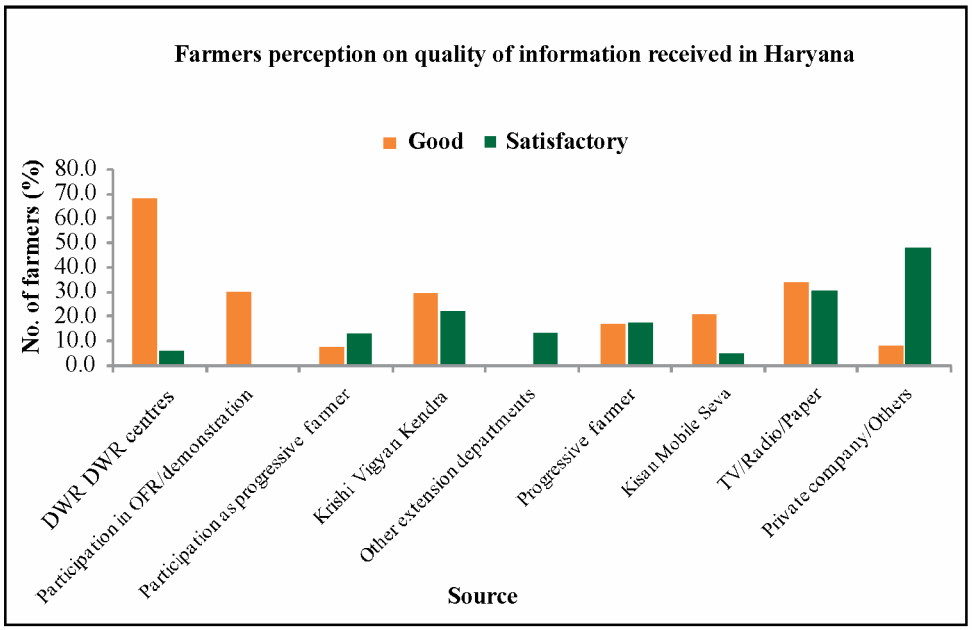
- About 35 and 22% respondents accessed the information monthly and seasonally, respectively, from DWR/DWR centres/ICAR Institute/SAUs.
- 30 and 35% farmers also received information daily and weekly, respectively from TV / Radio/ News paper / Literature.

Sr. No.	Source	Type of Information						
		Weed maanagement	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	15	06	08	04	01	06	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/ DWR centres/SAUs etc.	07	02	02	00	01	03	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	03	01	02	00	00	01	02
4	Krishi Vigyan Kendra (KVK)	07	04	08	04	03	06	03
5	Other extension functionaries/State line departments/NGO's	03	01	02	01	00	01	02
6	Progressive/Achiever farmer	05	03	04	03	03	05	01
7	Kisan Mobile Seva (KMS)	06	04	05	03	02	04	02
8	TV/Radio/News Paper/Literature	11	09	10	07	06	08	05
9	Private company/Local dealer/Others	11	10	13	07	08	10	02

- About 65% respondents obtained the information on weed management, 26% on fertilizer management, 34% on plant protection measures, 17% on farm machinery through visit to DWR/DWR centres/ICAR Institute/SAUs.
- Many respondents also accessed information from TV/Radio/News Paper/Literature. Among them 48% respondents obtained the information on weed management, 39% on fertilizer management and 43% on other plant protection measures.

Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	16	01	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	07	00	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	02	03	00
4	Krishi Vigyan Kendra (KVK)	07	05	00
5	Other extension functionaries/State line departments/NGO's	00	03	02
6	Progressive/Achiever farmer	04	04	00
7	Kisan Mobile Seva (KMS)	05	01	02
8	TV/Radio/News Paper/Literature	08	07	00
9	Private company/Local dealer/Others	02	11	03

- 70% respondents felt that the information provided by DWR/DWR centres/ICAR Institute/SAUs was of good quality.
- Among all the respondents who obtained the information from TV/Radio/News Paper/Literature, 35% realized that information provided was good.



Sr. No.	Source	Received information tried by farmers		Recommended practice has been adopted	
		Yes	No	Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	17	00	17	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	08	00	08	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	03	03	05	00
4	Krishi Vigyan Kendra (KVK)	11	00	11	00
5	Other extension functionaries/State line departments/NGO's	05	00	04	00
6	Progressive/Achiever farmer	06	03	08	01
7	Kisan Mobile Seva (KMS)	07	02	06	01
8	TV/Radio/News Paper/Literature	14	02	13	04
9	Private company/Local dealer/Others	14	01	13	02

- However, 74% respondents tried the received information and adopted the recommended practices obtained through visit to DWR/DWR centres/ ICAR Institute/ SAUs.

Sr. No.	Source	Suggestions, if any for improvement in extension services			
		Improvement in quality of information	Timeliness of information	Increase in frequency of demonstration	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	06	05	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	02	01	02	00
5	Other extension functionaries/State line departments/NGO's	00	00	00	01
6	Progressive/Achiever farmer	01	02	01	00
7	Kisan Mobile Seva (KMS)	02	01	00	00
8	TV/Radio/News Paper/Literature	02	03	01	01
9	Private company/Local dealer/Others	04	00	03	03

- 26% respondents suggested DWR/DWR centres/ ICAR Institute/ SAUs to provide the information on regular basis.

Punjab

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	21	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	10	11
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	19	02
4	Krishi Vigyan Kendra (KVK)	22	00
5	Other extension functionaries/State line departments/NGO's	15	05
6	Progressive/Achiever farmer	09	09
7	Kisan Mobile Seva (KMS)	22	00
8	TV/Radio/News Paper/Literature	22	00
9	Private company/Local dealer/Others	21	01

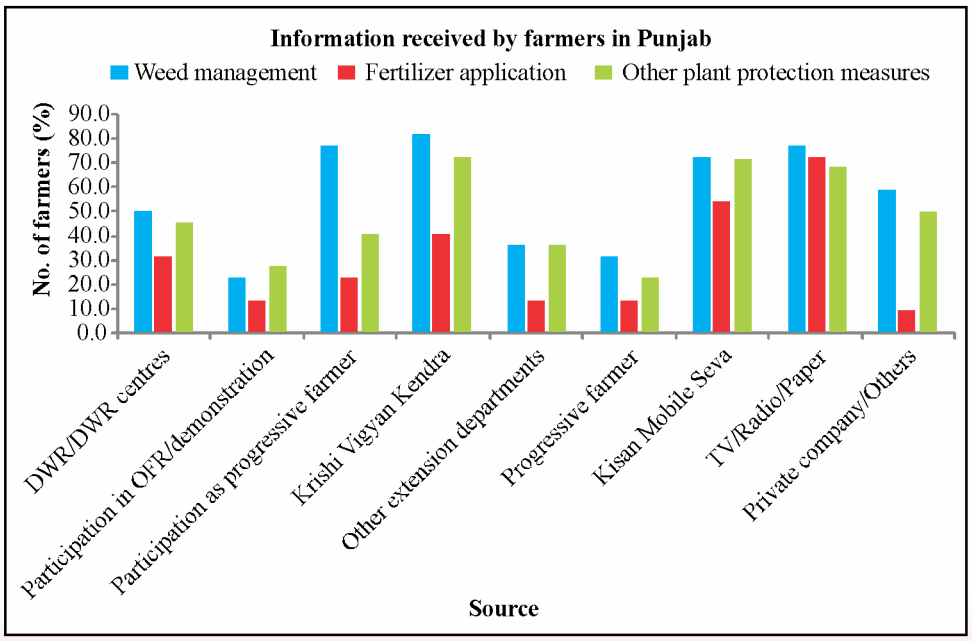
- All respondents accessed new technologies through Krishi Vigyan Kendra, Kisan Mobile Seva and TV/Radio/News Paper/Literature.
- However, 95% respondents also accessed these information through visit to DWR/DWR centres/ ICAR Institute/SAUs and Private company/Local dealer.
- 86% respondents accessed through participation in demonstration as progressive farmer conducted by Herbicide Company and other agency.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/ SAUs	00	00	01	11	09	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	00	00	06	03	02
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	02	07	08	02
4	Krishi Vigyan Kendra (KVK)	01	00	08	09	04	00
5	Other extension functionaries/State line departments/NGO's	00	00	08	03	10	00
6	Progressive/Achiever farmer	00	00	00	00	00	09
7	Kisan Mobile Seva (KMS)	05	01	00	00	16	00
8	TV/Radio/News Paper/Literature	17	05	00	00	00	00
9	Private company/Local dealer/Others	00	03	02	01	06	10

- 77% respondents obtained information daily from TV/Radio/News Paper/Literature and only 50% respondents received information seasonally from DWR/DWR centres/ICAR Institute/SAUs.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	11	07	10	04	04	16	03
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	05	03	06	02	04	06	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	17	05	09	09	03	12	03
4	Krishi Vigyan Kendra (KVK)	18	09	16	10	07	18	07
5	Other extension functionaries/State line departments/NGO's	08	03	08	13	12	09	02
6	Progressive/Achiever farmer	07	03	05	06	03	12	03
7	Kisan Mobile Seva (KMS)	16	12	16	12	13	14	05
8	TV/Radio/News Paper/Literature	17	16	15	15	15	16	05
9	Private company/Local dealer/Others	13	02	11	01	01	01	01

- 65–70% respondents received information on weed management, fertilizer application, plant protection measures, farm machinery, harvesting/marketing and improved seed variety from all the sources.



Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	21	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	10	02	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	16	01	02
4	Krishi Vigyan Kendra (KVK)	20	02	00
5	Other extension functionaries/State line departments/ NGO's	19	02	00
6	Progressive/Achiever farmer	11	07	00
7	Kisan Mobile Seva (KMS)	19	02	00
8	TV/Radio/News Paper/Literature	19	03	00
9	Private company/Local dealer/Others	09	09	03

- 95% respondents felt that information provided by DWR/DWR centres/ICAR Institute/SAUs was of good quality.

Sr. No.	Source	Received information tried by farmers		Recommended practice has been adopted	
		Yes	No	Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	21	00	21	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	10	02	12	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	10	09	18	00
4	Krishi Vigyan Kendra (KVK)	22	00	22	00
5	Other extension functionaries/State line departments/NGO's	21	00	21	00
6	Progressive/Achiever farmer	13	00	13	00
7	Kisan Mobile Seva (KMS)	21	00	21	00
8	TV/Radio/News Paper/Literature	22	00	22	00
9	Private company/Local dealer/Others	12	09	20	01

- More than 90% respondents tried the received information obtained from different sources by themselves.
- More than 90% respondents adopted the recommended practices obtained through different sources.

Sr. No.	Source	Suggestions, if any for improvement in extension services			
		Improvement in quality of information	Timeliness of information	Increase in frequency of demonstration	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	02	02	00
2	Participation in OFR/ demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	01	01	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	01	01	02
4	Krishi Vigyan Kendra (KVK)	00	03	03	00
5	Other extension functionaries/State line departments/NGO's	00	01	01	01
6	Progressive/Achiever farmer	00	02	02	00
7	Kisan Mobile Seva (KMS)	00	03	02	00
8	TV/Radio/News Paper/ Literature	00	03	02	00
9	Private company/Local dealer/Others	00	03	02	00

- Only few (10-12%) respondents suggested to provide the information on regular basis for improvement in the extension services by different agencies including DWR centres.
- Some of them also suggested to increase frequency of demonstrations.

Uttarakhand

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	19	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	10	10
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	18
4	Krishi Vigyan Kendra (KVK)	02	17
5	Other extension functionaries/State line departments/NGO's	02	17
6	Progressive/Achiever farmer	13	06
7	Kisan Mobile Seva (KMS)	07	10
8	TV/Radio/News Paper/Literature	09	10
9	Private company/Local dealer/Others	15	05

- 95% respondents accessed weed management technologies through visit to DWR/DWR centres/ICAR Institute/SAUs and 75% of them also get accessed to Private company/Local dealer/others for information.

Sr. No.	Source	Frequeny of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	01	05	11	01	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	03	05	03	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	01	01	00	00
4	Krishi Vigyan Kendra (KVK)	00	00	00	02	00	00
5	Other extension functionaries/State line departments/ NGO's	00	00	00	01	00	01
6	Progressive/Achiever farmer	00	03	03	01	02	03
7	Kisan Mobile Seva (KMS)	00	03	00	01	00	01
8	TV/Radio/News Paper/Literature	00	05	00	02	00	01
9	Private company/Local dealer/Others	00	03	01	08	02	01

- Most of the respondents (55%) contacted seasonally to obtain the information from DWR/DWR centres/ICAR Institute/SAUs.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/ SAUs	19	04	08	02	00	01	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/ SAUs etc.	11	02	03	01	01	01	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	02	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	01	01	01	00	00	00	00
5	Other extension functionaries/State line departments/ NGO's	01	00	00	00	00	01	02
6	Progressive/Achiever farmer	09	04	06	05	01	05	03
7	Kisan Mobile Seva (KMS)	00	01	02	03	01	04	03
8	TV/Radio/News Paper/Literature	04	02	06	00	00	03	03
9	Private company/Local dealer/Others	09	06	13	01	00	02	03

- 95% respondents obtained the information on weed management through visit to DWR/DWR centres/ICAR Institute/SAUs. Some of them (20 and 40%) also got information on fertilizer application and other plant protection measures from these sources.

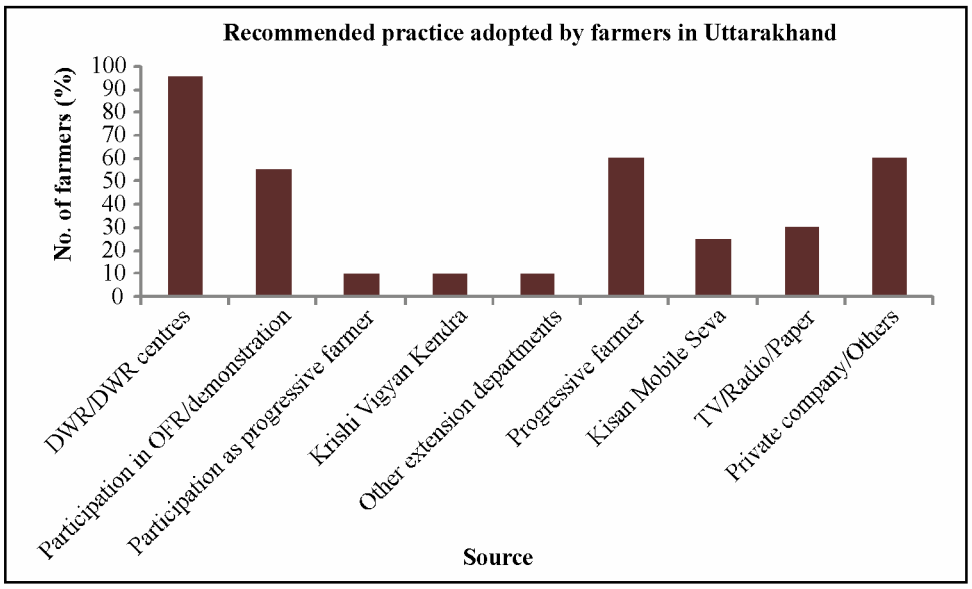
Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	19	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	11	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	01	00
4	Krishi Vigyan Kendra (KVK)	00	02	00
5	Other extension functionaries/State line departments/NGO's	00	03	00
6	Progressive/Achiever farmer	02	10	00
7	Kisan Mobile Seva (KMS)	03	03	00
8	TV/Radio/News Paper/Literature	02	07	01
9	Private company/Local dealer/Others	01	13	01

- 95% respondents realized that information obtained through visit to DWR/DWR centres/ICAR Institute/SAUs was of good quality.
- Very few (10%) respondents found the information as good which was obtained from TV/Radio/News Paper/Literature.

Sr. No.	Source	Received information tried by farmers		Recommended practice has been adopted	
		Yes	No	Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	13	07	19	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	10	01	11	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	01	02	00
4	Krishi Vigyan Kendra (KVK)	02	00	02	00
5	Other extension functionaries/State line departments/NGO's	02	01	02	00
6	Progressive/Achiever farmer	11	01	12	00
7	Kisan Mobile Seva (KMS)	03	03	05	01
8	TV/Radio/News Paper/Literature	06	02	06	00
9	Private company/Local dealer/Others	12	03	12	03

- About 65% respondents tried the information or technologies obtained from DWR/DWR centres / ICAR Institute/ SAUs.

- 95% respondents adopted the recommended practices provided by DWR/DWR centres/ICAR Institute/SAUs.
- To improve the extension services in the state, 5-10% respondents suggested to increase the frequency of demonstrations and to provide the information in regular basis.



South Zone

Telangana

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	10
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centers/SAUs etc.	10	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	03	07
4	Krishi Vigyan Kendra (KVK)	03	07
5	Other extension functionaries/State line departments/NGO's	03	07
6	Progressive/Achiever farmer	03	00
7	Kisan Mobile Seva (KMS)	03	07
8	TV/Radio/News Paper/Literature	03	07
9	Private company/Local dealer/Others	06	04

- All the respondents accessed new technologies through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs and 60% respondents also accessed the information through private companies/local dealers. Very few approached other agencies to get the information.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	02	01	00	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	01	09	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	03	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	00	03	00	00	00
5	Other extension functionaries/State line departments/ NGO's	00	00	02	01	00	00
6	Progressive/Achiever farmer	00	00	02	01	00	00
7	Kisan Mobile Seva (KMS)	00	03	00	00	00	00
8	TV/Radio/News Paper/Literature	03	00	00	00	00	00
9	Private company/Local dealer/Others	01	01	00	00	02	06

- 90% respondents acquired the information monthly during their participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	02	01	00	00	00	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	09	01	00	00	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	03	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	00	03	00	00	00	00
5	Other extension functionaries/State line departments/ NGO's	00	00	03	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	03	00	00	00	00	00
8	TV/Radio/News Paper/Literature	00	00	03	00	00	00	00
9	Private company/Local dealer/Others	09	04	00	00	00	00	00

- 90% respondents obtained the information on weed management during the participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs and through private companies/local dealers.
- Information on fertilizer application and other plant protection measures were obtained from agencies other than these.

Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	01	02	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	07	03	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	03	00	00
4	Krishi Vigyan Kendra (KVK)	03	00	00
5	Other extension functionaries/State line departments/NGO's	03	00	00
6	Progressive/Achiever farmer	03	00	00
7	Kisan Mobile Seva (KMS)	00	03	00
8	TV/Radio/News Paper/Literature	00	03	00
9	Private company/Local dealer/Others	03	06	00

- 70% farmers realized that the information obtained through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs was of good quality.

Sr. No.	Source	Received information tried by farmers		Recommended practice has been adopted	
		Yes	No	Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	03	00	03	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	04	06	04	06
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	03	00	02	01
4	Krishi Vigyan Kendra (KVK)	03	00	03	00
5	Other extension functionaries/State line departments/NGO's	03	00	00	03
6	Progressive/Achiever farmer	03	00	00	03
7	Kisan Mobile Seva (KMS)	03	00	00	03
8	TV/Radio/News Paper/Literature	03	00	00	03
9	Private company/Local dealer/Others	04	05	00	09

- Only 30-40% respondents tried the information received from different sources.
- Only 40% respondents adopted the recommended practices provided through OFR/demonstration by DWR/DWR centres/SAUs.

- Lack of financial resources was the main reason for non-adoption of recommended practices.
- 20-30% respondents suggested to provide the information on regular basis for improvement in the services.

Karnataka

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	19	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	11	09
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	20
4	Krishi Vigyan Kendra (KVK)	06	14
5	Other extension functionaries/State line departments/NGO's	00	20
6	Progressive/Achiever farmer	00	20
7	Kisan Mobile Seva (KMS)	00	20
8	TV/Radio/News Paper/Literature	20	00
9	Private company/Local dealer/Others	18	02

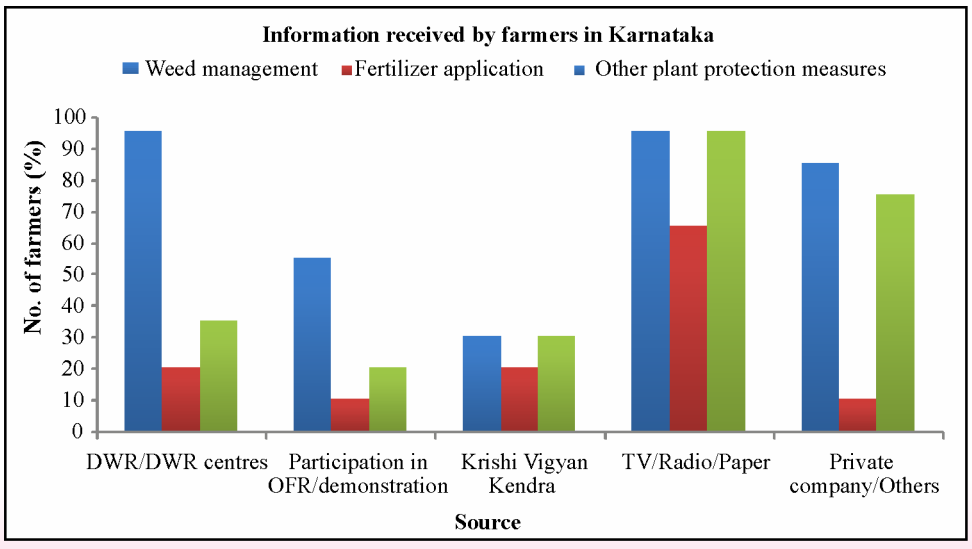
- All the respondents accessed weed management technologies through TV/Radio/News Paper/Literature and 95% accessed through visit to DWR/DWR centres/ICAR Institute/SAUs.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	04	08	05	02	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	00	01	07	03	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	00	04	02	00	00
5	Other extension functionaries/State line departments/NGO's	00	00	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	18	00	00	00	02	00
9	Private company/Local dealer/Others	01	00	00	05	12	00

- 90% respondents acquired information daily through TV/Radio/News Paper/Literature and 40% obtained information monthly from DWR/DWR centres/ICAR Institute/SAUs by making visit to these places.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/ SAUs	19	04	07	00	00	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/ DWR centres/SAUs etc.	11	02	04	00	01	00	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	06	04	06	02	02	00	00
5	Other extension functionaries/State line departments/NGO's	00	00	00	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	19	13	19	05	04	04	00
9	Private company/Local dealer/Others	17	02	15	00	00	01	00

- Most of the respondents (95%) obtained the information on weed management through visit to DWR/DWR centres/ICAR Institute/SAUs and through TV/Radio/News Paper/Literature. And 85% also got the information on weed management from Private company/Local dealer/Others.



Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	19	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	11	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00
4	Krishi Vigyan Kendra (KVK)	04	02	00
5	Other extension functionaries/State line departments/ NGO's	00	00	00
6	Progressive/Achiever farmer	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00
8	TV/Radio/News Paper/Literature	09	11	00
9	Private company/Local dealer/Others	01	15	02

- 95% respondents felt that the information provided by DWR/DWR centres/ICAR Institute/SAUs was of good quality. These technologies were tried and also adopted by them.

Kerala

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	12	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	03	08
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	09
4	Krishi Vigyan Kendra (KVK)	08	04
5	Other extension functionaries/State line departments/NGO's	12	00
6	Progressive/Achiever farmer	04	06
7	Kisan Mobile Seva (KMS)	00	10
8	TV/Radio/News Paper/Literature	12	00
9	Private company/Local dealer/Others	09	03

- All respondents (100%) had access to DWR/DWR centres/ICAR Institute/SAUs for weed related problems, other extension functionaries/State line departments/NGO and TV/Radio/News Paper/Literature.
- 83% respondents contacted DWR/DWR centres/ICAR Institute/SAUs according to their needs but all the respondents accessed the information daily through TV/Radio/News Paper/Literature.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	06	12	12	00	00	02	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/ DWR centres/SAUs etc.	03	03	03	00	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	00	00	00	00	00	08	08
5	Other extension functionaries/State line departments/NGO's	02	04	04	00	00	00	08
6	Progressive/Achiever farmer	00	04	00	00	00	04	04
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	12	12	12	08	10	10	08
9	Private company/Local dealer/Others	00	09	09	00	00	00	00

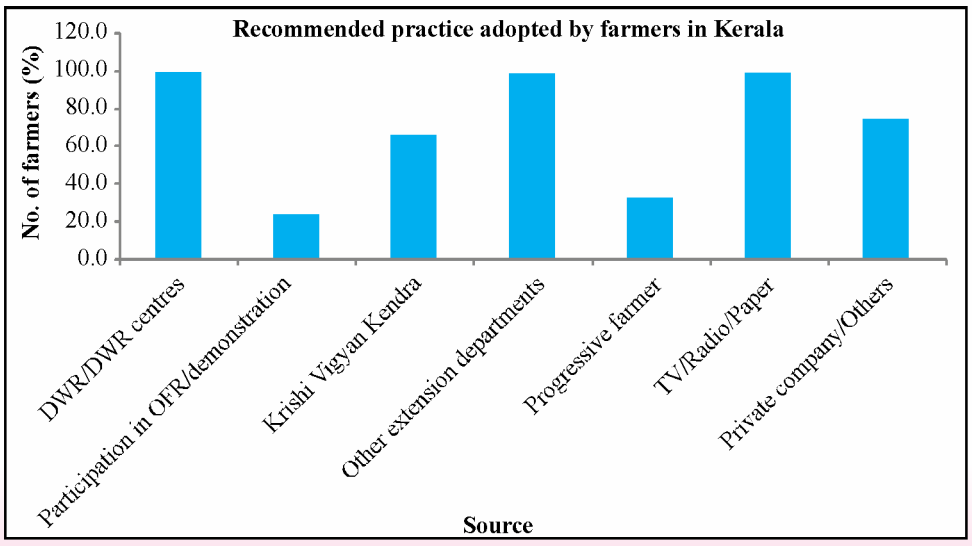
- 50% respondents obtained the information on weed management and all respondents on fertilizer management and other plant protection measures through visit to DWR/DWR centres/ICAR Institute/SAUs.
- All respondents got information on weed management, fertilizer management and other plant protection measures from TV/Radio/News Paper/Literature.

Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	12	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	03	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00
4	Krishi Vigyan Kendra (KVK)	08	00	00
5	Other extension functionaries/State line departments/NGO's	10	02	00
6	Progressive/Achiever farmer	00	04	00
7	Kisan Mobile Seva (KMS)	00	00	00
8	TV/Radio/News Paper/Literature	12	00	00
9	Private company/Local dealer/Others	00	09	00

- Respondents felt that information obtained through visit to DWR/DWR centres/ICAR Institutes/SAUs and TV/Radio/News Paper/Literature were of good quality and all of them tried themselves.

Sr. No.	Source	Received information tried by farmers		Recommended practice has been adopted	
		Yes	No	Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	12	00	12	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	03	00	03	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	08	00	08	00
5	Other extension functionaries/State line departments/NGO's	12	00	12	00
6	Progressive/Achiever farmer	04	00	04	00
7	Kisan Mobile Seva (KMS)	00	00	00	00
8	TV/Radio/News Paper/Literature	12	00	12	00
9	Private company/Local dealer/Others	09	00	09	00

- All the respondents tried and adopted the information themselves which they obtained through visit to DWR/DWR centres/ICAR Institute/SAUs, other extension functionaries/State line departments/NGO and TV/Radio/News Paper/Literature.
- Few respondents (25%) mentioned the social fear as one of the reasons for not adopting the technologies obtained from TV/Radio/News Paper/Literature and Private company/Local dealer/Others.
- To improve the extension services in the state, 67% respondents suggested to increase the frequency of demonstrations by DWR/DWR centres/ICAR Institutes/SAUs and through TV/Radio/News Paper/Literature.



Puducherry

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	03	03
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	01	04
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	04
4	Krishi Vigyan Kendra (KVK)	02	03
5	Other extension functionaries/State line departments/NGO's	01	00
6	Progressive/Achiever farmer	00	00
7	Kisan Mobile Seva (KMS)	00	00
8	TV/Radio/News Paper/Literature	03	00
9	Private company/Local dealer/Others	05	00

- 50% respondents accessed Private company/Newspaper/Literature seasonally for their crop related problems.
- Only 10-30% respondents obtained information through visit to DWR/DWR centres/ICAR Institute/SAUs seasonally, participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc., Krishi Vigyan Kendra, other extension functionaries/State line departments/NGO's and through TV/Radio/News Paper/Literature.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measure	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	02	00	00	00	00	01	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	01	00	00	00	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	01	00	01	00	00	00	00
5	Other extension functionaries/ State line departments/NGO's	00	00	00	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	00	00	00	00	00	00	00
9	Private company/Local dealer/Others	01	01	00	00	00	00	01

- Very few respondents (20%) obtained information on weed management through visit to DWR/DWR centres/ICAR Institute/SAUs.
- Only 10% respondents obtained information on weed management and other plant protection measure from Krishi Vigyan Kendra.

Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	01	02	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	01	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00
4	Krishi Vigyan Kendra (KVK)	01	01	00
5	Other extension functionaries/State line departments/NGO's	01	00	00
6	Progressive/Achiever farmer	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00
8	TV/Radio/News Paper/Literature	00	00	00
9	Private company/Local dealer/Others	00	03	00

- 10% of the respondents felt the information, good and 20%, satisfactory obtained through visit to DWR/DWR centres/ICAR Institute/SAUs.
- 20% respondents answered about the quality of information obtained from Krishi Vigyan Kendra and 10% of them marked them as good and satisfactory.
- 30% respondents tried and adopted the information themselves obtained through different agencies.

Tamil Nadu

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	04	05
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	03	06
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	02	07
4	Krishi Vigyan Kendra (KVK)	03	06
5	Other extension functionaries/State line departments/NGO's	04	04
6	Progressive/Achiever farmer	02	05
7	Kisan Mobile Seva (KMS)	00	05
8	TV/Radio/News Paper/Literature	03	04
9	Private company/Local dealer/Others	03	04

- 10% respondents accessed the information through DWR/DWR centres/ICAR Institute/SAUs and other extension functionaries/State line departments/ NGOs, 30% accessed through participation in OFR/demonstration as

progressive farmer conducted by DWR/DWR centres/SAUs, Krishi Vigyan Kendra, TV/Radio/News Paper/Literature and Private company/Local dealer for information related to crop production.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	02	02	01	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	02	01	01	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	02	00	02	00	00
4	Krishi Vigyan Kendra (KVK)	01	03	00	00	00	00
5	Other extension functionaries/State line departments/ NGO's	00	00	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	00	02	00	00	00	00
9	Private company/Local dealer/Others	00	01	00	00	00	00

- 20% respondents contacted weekly as well as monthly to DWR/DWR centres/ICAR Institute/SAUs and 30% respondents contacted weekly to Krishi Vigyan Kendra for crop related information.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	03	03	03	01	01	01	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/ SAUs etc.	03	02	02	00	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	04	02	02	03	02	01	01
4	Krishi Vigyan Kendra (KVK)	02	01	01	01	01	01	01
5	Other extension functionaries/State line departments/ NGO's	01	00	01	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	02	02	02	01	01	01	01
9	Private company/Local dealer/Others	01	00	00	01	00	00	00

- 30% of them obtained the information on weed management, fertilizer management and other plant protection measures from DWR/DWR centres/ICAR Institute/SAUs.
- The information which they assessed from all the sources were mainly on weed/fertilizer management and other plant protection measures.

Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	04	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	01	00	02
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	01	02	00
4	Krishi Vigyan Kendra (KVK)	01	00	00
5	Other extension functionaries/State line departments/ NGO's	00	01	00
6	Progressive/Achiever farmer	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00
8	TV/Radio/News Paper/Literature	01	01	00
9	Private company/Local dealer/Others	01	00	00

- 40% respondents realized that the information which they obtained through visit to DWR/DWR centres/ICAR Institute/SAUs was good and it was also tried / adopted by them.
- To improve the extension services in the state, 40% respondents suggested to increase the frequency of demonstration by all the sources in the farmers field.

West Zone

Gujarat

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	20	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	20	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	05	08
4	Krishi Vigyan Kendra (KVK)	19	01
5	Other extension functionaries/State line departments/NGO's	17	01
6	Progressive/Achiever farmer	07	02
7	Kisan Mobile Seva (KMS)	00	06
8	TV/Radio/News Paper/Literature	13	02
9	Private company/Local dealer/Others	07	05

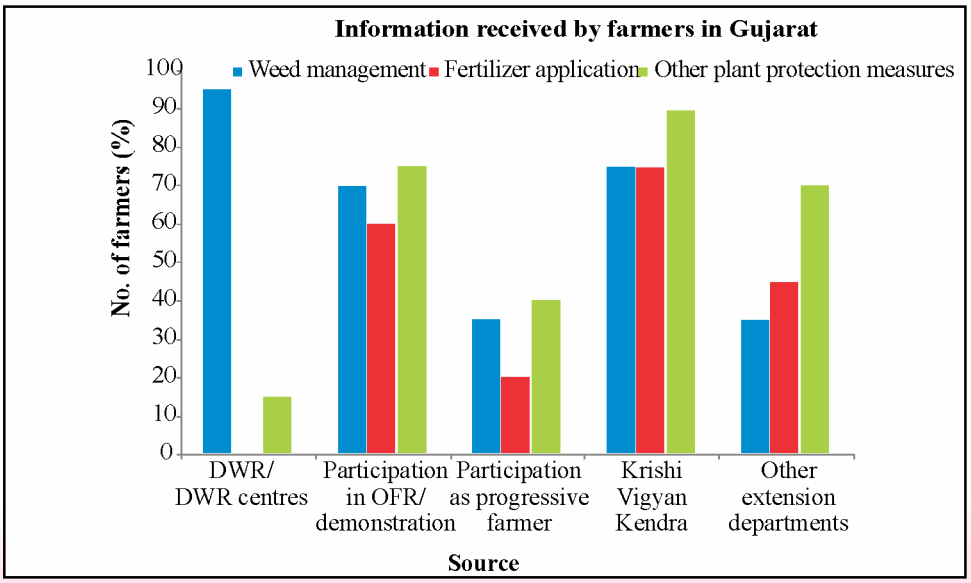
- All the respondents accessed the technologies through visit to DWR/DWR centres/ICAR Institute/SAUs and through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs.
- 95% and 85% respondents also accessed technologies from Krishi Vigyan Kendra and other extension functionaries/State line departments/NGOs for crop production.
- Many of them (65%) also got information from TV/Radio/News Paper/Literature.

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	02	06	04	07	01
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	01	04	06	08	01
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	03	01	03	01
4	Krishi Vigyan Kendra (KVK)	00	00	07	06	06	01
5	Other extension functionaries/State line departments/ NGO's	00	01	07	00	08	01
6	Progressive/Achiever farmer	00	00	01	00	05	00
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	02	07	01	00	04	00
9	Private company/Local dealer/Others	00	00	01	01	03	00

- 40% respondents obtained the information on need basis through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs and through other extension functionaries/State line departments/NGO's.
- Besides, 30% also got information monthly through visit to DWR/DWR centres/ICAR Institute/SAUs and Krishi Vigyan Kendra.

Sr. No.	Source	Type of Information						
		Weed management	Fertilizer application	Other plant protection measures	Farm machinery	Harvesting/ Marketing	Improved seed variety	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	19	00	03	00	00	01	00
2	Participation in OFR/demonstration asprogressive farmer conducted by DWR/DWR centres/SAUs etc.	14	12	15	00	00	07	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	07	04	08	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	15	15	18	05	00	14	00
5	Other extension functionaries/State line departments/NGO's	07	09	14	03	01	07	00
6	Progressive/Achiever farmer	00	01	00	01	00	01	05
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	02	03	03	03	00	01	01
9	Private company/Local dealer/Others	01	01	02	00	00	01	04

- 95% respondents received information on weed management by visiting to DWR/DWR centres/ICAR Institute/SAUs.
- 70% also got information on weed management, 60% on fertilizer management and 75% on other plant protection measures through participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.
- 75% respondents obtained the information on weed/fertilizer management and 90% on other plant protection measure from Krishi Vigyan Kendra.



Sr. No.	Source	Quality of Information		
		Good	Satisfactory	Poor
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	20	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	20	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	19	00	00
4	Krishi Vigyan Kendra (KVK)	20	00	00
5	Other extension functionaries/State line departments/NGO's	16	01	00
6	Progressive/Achiever farmer	04	03	00
7	Kisan Mobile Seva (KMS)	00	00	00
8	TV/Radio/News Paper/Literature	08	03	00
9	Private company/Local dealer/Others	03	03	00

- All respondents realized that the information obtained through visit to DWR/ DWR centres/ ICAR Institute/ SAUs, participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs and Krishi Vigyan Kendra were of good quality.
- 80% respondents also expressed that information obtained from other extension functionaries/State line departments/NGOs was of good quality.

Sr. No.	Source	Received information tried by farmers	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	20	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	20	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	09	01
4	Krishi Vigyan Kendra (KVK)	20	00
5	Other extension functionaries/State line departments/NGO's	17	00
6	Progressive/Achiever farmer	03	02
7	Kisan Mobile Seva (KMS)	00	00
8	TV/Radio/News Paper/Literature	05	04
9	Private company/Local dealer/Others	04	01

- All the respondents tried the technologies/information obtained from DWR/DWR centres/ICAR Institute/SAUs and Krishi Vigyan Kendra (KVK) and 95% of them have adopted also.

If not, reasons for not adopting recommended practices

Sr. No.	Source	Lack of financial resources	Non availability of inputs & physical resources	Lack of technical advice for follow up	Social fear	Not useful
1	Visit to DWR/DWR centres/ICAR Institute/ SAUs	01	00	01	00	18
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	01	00	01	00	18
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	01	00	19
4	Krishi Vigyan Kendra (KVK)	01	00	01	00	18
5	Other extension functionaries/State line departments/NGO's	01	00	01	00	18
6	Progressive/Achiever farmer	00	00	02	00	18
7	Kisan Mobile Seva (KMS)	00	00	00	00	20
8	TV/Radio/News Paper/Literature	01	00	03	00	16
9	Private company/Local dealer/Others	01	00	02	00	17

- Only few respondents (5%) of the state mentioned the problem of lack of financial resources as the reason for non-adoption of recommended practices through all the sources. Some of them also mentioned the lack of technical advice for follow-up as the reason.

Sr. No.	Source	Suggestions if any for improvement in extension services			
		Improvement in quality of information	Timeliness of information	Increase in frequency of demonstration	Others
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	02	14	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR /DWR centres/SAUs etc.	00	01	15	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	01	08	00
4	Krishi Vigyan Kendra (KVK)	01	01	17	00
5	Other extension functionaries/State line departments/NGO's	01	01	12	00
6	Progressive/Achiever farmer	01	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00
8	TV/Radio/News Paper/Literature	00	01	00	00
9	Private company/Local dealer/Others	01	00	00	00

- Respondents (40-85%) of the state suggested to increase the frequency of demonstration for improvement in the extension activities through Krishi Vigyan Kendra.

Maharashtra

Sr. No.	Source	Whether Access	
		Yes	No
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	05	06
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	11
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	11
4	Krishi Vigyan Kendra (KVK)	11	00
5	Other extension functionaries/State line departments/NGO's	00	11
6	Progressive/Achiever farmer	00	11
7	Kisan Mobile Seva (KMS)	00	11
8	TV/Radio/News Paper/Literature	02	09
9	Private company/Local dealer/Others	00	11

- All respondents accessed weed management technologies through Krishi Vigyan Kendra.
- 45% respondents accessed the technologies through visit DWR/ DWR centres/

Sr. No.	Source	Frequency of contact					
		Daily	Weekly	Monthly	Seasonally	Need based	Casual contact
1	Visit to DWR/DWR centres/ICAR Institute/SAUs	00	00	00	01	00	00
2	Participation in OFR/demonstration as progressive farmer conducted by DWR/DWR centres/SAUs etc.	00	00	00	00	00	00
3	Participation in demonstration as progressive farmer conducted by herbicides company and any other agency	00	00	00	00	00	00
4	Krishi Vigyan Kendra (KVK)	03	10	04	02	00	00
5	Other extension functionaries/State line departments/ NGO's	00	00	00	00	00	00
6	Progressive/Achiever farmer	00	00	00	00	00	00
7	Kisan Mobile Seva (KMS)	00	00	00	00	00	00
8	TV/Radio/News Paper/Literature	00	00	00	00	00	00
9	Private company/Local dealer/Others	00	00	00	00	00	00

- 91% respondents contacted Krishi Vigyan Kendra weekly for information pertaining to crop production.
- All the respondents received the information on weed management from Krishi Vigyan Kendra. And 64% of them also received information on fertilizer application and other plant protection measures from Krishi Vigyan Kendra.
- 91% respondents spoke out the information as good which was received from KVK and all of them also tried and subsequently adopted themselves.
- Lack of technical advice for follow up by Krishi Vigyan Kendra was mentioned as the one of reasons of non-adoption of used management technologies by 18% respondents.
- All respondents suggested to increase the frequency of demonstration through KVKs for improvement in the extension services.

6. Response of respondents/beneficiaries on related aspect of weed management

This section describes the understanding of the respondent / farmers on weed management technologies. They were asked about their experiences during past *e.g.* weeds as the major obstacles in crop production; imporance of weed management in traditional farming system; occurrence of weed species; hand weeding as a weed control methods; usefulness of IWM technologies than traditional method; chemical method; information on suitable herbicides and their doses; suitable time and method of application of herbicides, availability of herbicides in their locality, demonstration of IWM technologies, awareness about preverntive methods such as cleaning of seeds before sowing, agricultural implements, irrigation channel and use of decomposed organic matter in the field. Knowledge about quarantine law or legal awarness about invasive weeds, HTCs/ transgenic crops, super weeds, herbicide resistance weeds were also checked during the survey. In the subsequent sections, tables with many questions which were asked to the farmers were presented. Therefore, in questions 'you' indicates the farmers.

Central Zone

Madhya Pradesh

Sr. No.	Question	Yes	Scores			No
			Low	Mod erate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	92	04	44	44	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	87	74	12	00	05
c	Is occurrence of weed species decreased than earlier?	43	12	29	02	49
d	Was hand weeding used as one of weed control methods?	91	17	68	06	01
e	Is hand weeding used currently by you?	74	60	13	01	18
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	90	01	44	45	02
g	Have you used chemical method of weed control?	87	02	30	55	05
h	Have you received information on suitable herbicide and their required doses? Yes/No	89	02	87	00	03
i	If yes, have you applied recommended doses of herbicides?	89	02	84	03	03
j	Whether received information on suitable time and method of application of recommended herbicide?	85	02	81	02	07
k	If yes, have you followed the recommended time and method of application of particular herbicides?	82	06	74	02	10
l	Is the herbicide easily available in your locality?	73	01	70	02	19
m	Have you used demonstrated - Improved Weed Management technologies later on?	62	01	59	02	30
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	52	01	51	00	39

p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	**81** **72** **16** **17**				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds?	**90**	--	--	--	**02**
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	**01**	**00**	**01**	**00**	**91**
s	Have you any knowledge about super weeds?	**00**	--	--	--	**92**
t	Do you have any knowledge/ idea about herbicide resistance weed?	**32**	**31**	**01**	**00**	**60**

- In **Madhya Pradesh**, all the respondents were agree that the weeds are one of the major obstacles in crop production. 48% respondents realized that weeds are the major and moderate obstacle in the usual crop production.
- 95% respondents felt that in the traditional farming system, weed management was not given due importance.
- 47% respondents expressed that the weed species decreased than earlier.
- Almost all respondents (98.9%) of the state were using hand weeding as one of the method of weed control in past and 80.4% respondents were using it currently for controlling weeds.
- About 98% respondents were convinced that Improved Weed Management (IWM) technologies give better weed control and yield than traditional method of weed control.
- 95% of the respondents were using the chemical method with greater extent for controlling weeds and 97% received information on suitable herbicide and their required doses and they also applied recommended doses of herbicides.
- Instructions on suitable time and method of application of recommended herbicides were followed by 92% respondents.
- According to the 79% respondents, the herbicide was easily available in their locality and 67% of respondents preferred to follow the demonstrated IWM technologies.
- Only 57% respondents in the state were aware about preventive method of weed management. As preventive measures, cleaning of seeds before sowing (88%) was mostly followed than the other measures. Besides, cleaning of agricultural implements (78%), use of decomposed organic matter in the field (18%) and cleaning of irrigation channel (17%) were also used by the respondents.
- About 98% respondents in the region had knowledge about quarantine law or legal awareness about invasive weeds. The respondents of the state don't have any knowledge/idea about Herbicide Tolerent Crops (HTCs)/Transgenic crops/super weeds. Only 35% respondents were aware about herbicide resistance weed.
- 30% of the respondents did not adopt improved weed management technologies for many reasons such as :

  i. Due to less availability of happy seeder, ii. Non availability of equipment used in conservation agriculture, iii.Can't afford/purchase happy seeder iv. Don't have implements, v. Have financial problems to purchase happy seeder vi. Lack of financial resources, vii. No idea of IWM technology before visit to DWR, viii. Due to unavailability of proper information, ix. No contact with related agencies

Bihar

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	20	00	00	20	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	20	00	04	16	00
c	Is occurrence of weed species decreased than earlier?	20	00	12	08	00
d	Was hand weeding used as one of weed control methods?	20	00	02	18	00
e	Is hand weeding used currently by you?	20	09	11	00	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	20	00	01	19	00
g	Have you used chemical method of weed control?	20	00	18	02	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	20	00	20	00	00
i	If yes, have you applied recommended doses of herbicides?	20	00	00	20	00
j	Whether received information on suitable time and method of application of recommended herbicide?	20	00	00	20	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	20	00	00	20	00
l	Is the herbicide easily available in your locality?	20	00	19	01	00
m	Have you used demonstrated Improved Weed Management technologies later on?	20	00	00	20	00
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	20	00	20	00	00
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field ?	20 20 20 20				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	20
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	20
s	Have you any knowledge about super weeds?	00	--	--	--	20
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	20

- In **Bihar,** all the respondents were agree that despite being the major obstacle in crop production, weed management was not given much importance in traditional farming system.
- According to all the respondents of the state, weed species decreased moderately than earlier and hand weeding was used as one of the major method of weed control. They are also using this practice currently at moderate level.
- All the respondents were convinced that IWM- technologies give better weed control and yield than traditional method.
- All respondents were using chemical method of weed control moderately. The information on suitable herbicides and their required doses were received by all the respondents. They were also following the recommended time and method of application of particular herbicide.
- The herbicides were easily available in their locality. All the respondents were using demonstrated Improved Weed Management technologies and they were aware about the preventive methods of weed management. All the preventive methods i.e. cleaning of seeds before sowing, agricultural implements, irrigation channel and use of decomposed organic matter in the field were used by the respondents.
- The respondents of the state did not have any knowledge about quarantine law or legal awareness about invasive weeds, knowledge about HTCs/transgenic crops, super weeds and herbicide resistance weed.

Chhattisgarh

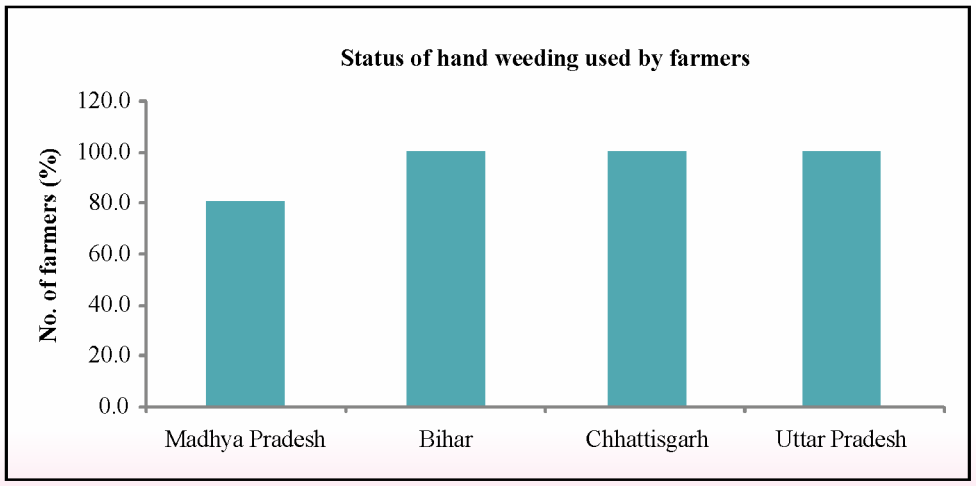
Sr. No.	Question	Yes	Scores			No
			Low	Mode rate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	19	02	04	13	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	19	00	09	10	00
c	Is occurrence of weed species decreased than earlier?	19	00	00	19	00
d	Was hand weeding used as one of weed control methods?	19	00	00	19	00
e	Is hand weeding used currently by you?	19	00	19	00	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	19	00	19	00	00
g	Have you used chemical method of weed control?	19	00	19	00	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	19	00	19	00	00
i	If yes, have you applied recommended doses of herbicides?	19	00	19	00	00
j	Whether received information on suitable time and method of application of recommended herbicide?	19	00	19	00	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	18	00	18	00	01
l	Is the herbicide easily available in your locality?	16	00	16	00	03
m	Have you used demonstrated Improved Weed Management technologies later on?	12	00	12	00	07
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	19	00	19	00	00
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	19 00 00 17				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	19
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	19
s	Have you any knowledge about super weeds?	00	--	--	--	19
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	19

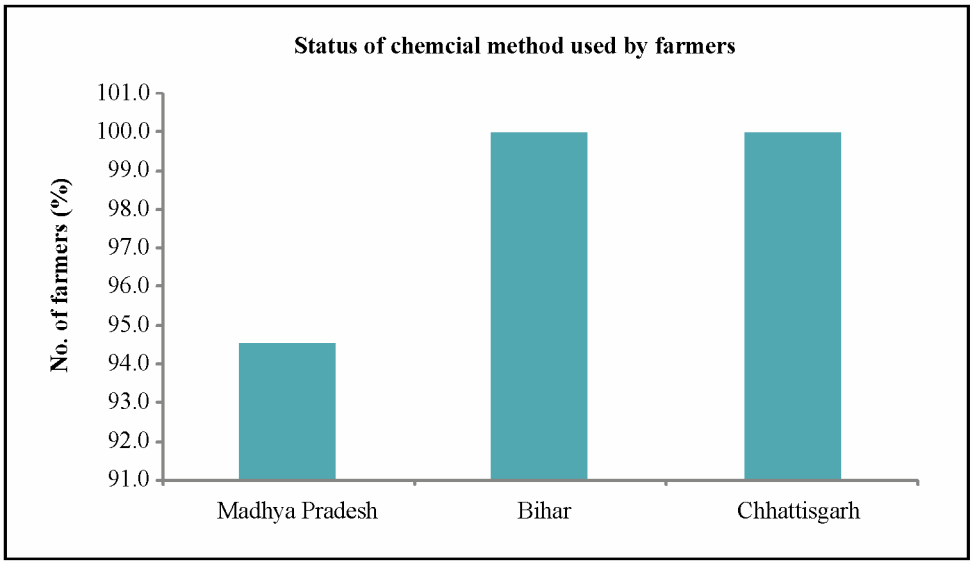
- In **Chhattisgarh,** all the respondents were agree that weeds were the major obstacle in crop production. Among which 68.4 % respondents believed that the weeds were the major obstacle in the region in past.
- All the respondents of the state were in opinion that in traditional farming system they were not giving much importance to weed management.
- In the state, occurrence of weed species decreased than earlier and hand weeding was one of the weed control methods. Respondents were using the method of hand weeding to control weeds.
- All respondents of the state were convinced that the IWM technologies control weeds better and give more yields than traditional methods. They were also using the chemical method.
- All the respondents of the state received the information related to suitable herbicides and their doses. The respondents had followed the recommended doses of herbicides.
- All the respondents received the information related to time and method of application of herbicides, and most of them (95%) followed the instructions.
- According to 84% respondents, herbicides were easily available in their local markets. About 63% respondents used the demonstrated IWM technologies in their fields.
- All respondents were aware about preventive methods of weed management. Respondents (100%) were using cleaning of seeds before sowing and use of decomposed organic matter in the field (89%) as preventive methods.
- The respondents of the state did not have any knowledge about quarantine law /legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.

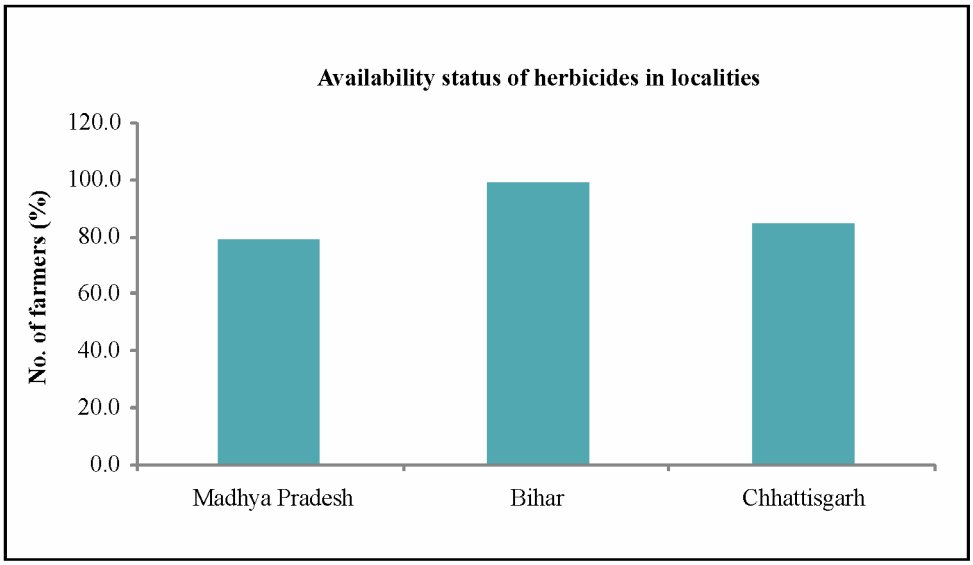
Uttar Pradesh

Sr. No.	Question	Yes	Scores			No
			Low	Mode rate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	20	00	01	19	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	20	20	00	00	00
c	Is occurrence of weed species decreased than earlier?	00	--	--	--	20
d	Was hand weeding used as one of weed control methods?	20	00	20	00	00
e	Is hand weeding used currently by you?	20	00	20	00	00
f	Are you convinced that Improved Weed Management technologies give bett er weed control and yield than traditional method? If yes, indicate the yield increase.	20	00	00	20	00
g	Have you used chemical method of weed control?	00	--	--	--	20
h	Have you received information on suitable herbicide and their required doses? Yes/No	00	--	--	--	20
i	If yes, have you applied recommended doses of herbicides?	00	--	--	--	20
j	Whether received information on suitable time and method of application of recommended herbicide?	00	--	--	--	20
k	If yes, have you followed the recommended time and method of application of particular herbicides?	00	--	--	--	20
l	Is the herbicide easily available in your locality?	00	--	--	--	20
m	Have you used demonstrated Improved Weed Management technologies later on?	20	00	20	00	00
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	20	00	20	00	00
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	20 20 00 00				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	20
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	20
s	Have you any knowledge about super weeds?	00	--	--	--	20
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	20

- In **Uttar Pradesh,** all the respondents accepted that the weeds are the major obstacle in crop production.
- According to them, occurrence of weed species did not decrease in the area.
- Hand weeding was used as one of the methods of weed control and, they were also using this practice in their fields.
- All the respondents were convinced that IWM technologies give better weed control and yield than traditional method.
- Respondents in the state were not using the chemical method of weed control.
- The herbicides in state were not easily available and it was one of the reason for not adopting the chemical method of weed control.
- All the respondents in the state followed the IWM technologies except chemical method.
- All the respondents were aware about preventive methods of weed management and they were using cleaning of seeds before sowing and cleaning of agricultural implements in the field as methods of prevention.
- The respondents of the state did not have any knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.




Status of chemcial method used by farmers
No. of farmers (%)
101.0
100.0
99.0
98.0
97.0
96.0
95.0
94.0
93.0
92.0
91.0
Madhya Pradesh
Bihar
Chhattisgarh


Availability status of herbicides in localities
No. of farmers (%)
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Madhya Pradesh
Bihar
Chhattisgarh

East Zone

Odisha

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	13	00	10	03	07
b	Do you feel that in traditional farming system, weed management was not given due importance?	00	--	--	--	20
c	Is occurrence of weed species decreased than earlier?	07	00	07	00	13
d	Was hand weeding used as one of weed control methods?	20	00	09	11	00
e	Is hand weeding used currently by you?	20	00	01	19	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	18	00	18	00	02
g	Have you used chemical method of weed control?	18	00	18	00	02
h	Have you received information on suitable herbicide and their required doses? Yes/No	18	00	18	00	01
i	If yes, have you applied recommended doses of herbicides?	19	00	19	00	01
j	Whether received information on suitable time and method of application of recommended herbicide?	19	00	19	00	01
k	If yes, have you followed the recommended time and method of application of particular herbicides?	19	00	19	00	01
l	Is the herbicide easily available in your locality?	08	00	08	00	12
m	Have you used demonstrated Improved Weed Management technologies later on?	01	00	01	00	19
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	19	01	18	00	01
p	If yes, what type of preventive methods are used by you					02
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	17 07 08 01				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	20
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	20
s	Have you any knowledge about super weeds?	00	--	--	--	20
t	Do you have any knowledge/ idea about herbicide resistance weed?	05	05	00	00	15

- In **Odisha,** 65% respondents were agree that the weeds are one of the major obstacles in crop production.
- In traditional farming, respondents of the state were giving importance to weed management.
- According to 35% respondents of the state, weed species decreased than earlier.
- All the respondents of the state used the method of hand weeding as one of the for weed control along with other methods.
- 90% respondents were convinced that IWM technologies give better weed control and yield than traditional method.
- 90% respondents were using chemical method for controlling weeds and also receiving information on suitable herbicide and their required doses.
- 95% respondents followed the instructions on suitable time and method of application of recommended herbicides.
- According to 40% of respondents, the herbicides were easily available in their locality.
- Only 5% respondents followed the demonstrated IWM technologies and the reasons for non-adoption were :
  i. Non availability of equipments/herbicides used in conservation agriculture
  ii. Due to unavailability of proper information
- 95% respondents in the state were aware about preventive method of weed management. For preventive measure, cleaning of seeds before sowing was majorly followed by 85% respondents.
- The respondents of the state don't have any knowledge/idea about quarantine law or legal awareness about invasive weeds and HTCs/Transgenic crops/super weeds.
- Only 20% respondents were aware about herbicide resistance weed.

Jharkhand

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	22	00	06	16	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	22	14	00	08	00
c	Is occurrence of weed species decreased than earlier?	22	04	13	05	00
d	Was hand weeding used as one of weed control methods?	22	00	00	22	00
e	Is hand weeding used currently by you?	22	07	01	14	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	22	14	00	08	00
g	Have you used chemical method of weed control?	22	08	14	00	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	22	00	22	00	00
i	If yes, have you applied recommended doses of herbicides?	22	00	22	00	00
j	Whether received information on suitable time and method of application of recommended herbicide?	22	00	00	22	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	22	00	00	22	00
l	Is the herbicide easily available in your locality?	22	22	00	00	00
m	Have you used demonstrated Improved Weed Management technologies later on?	22	02	06	14	00
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	01	01	00	00	21
p	If yes, what type of preventive methods are used by you					21
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	00 00 00 01				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	22
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	22
s	Have you any knowledge about super weeds?	00	--	--	--	22
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	22

- In **Jharkhand**, all the respondents were agree that the weeds are major obstacle in crop production and in traditional farming too, they were giving importance to weed management.
- According to all the respondents, weed species decreased than earlier and they were using hand weeding as one of the methods of weed control and they are also using this practice currently.
- All respondents were convinced that the IWM technologies give better weed control and yield than traditional method.
- They were using chemical method of weed control. The information on suitable herbicides and their required doses were received by them and they were also following the recommended time and method of application of particular herbicide. The herbicides were easily available in their locality.
- All the respondents were using demonstrated IWM technologies.
- Only 4.5% respondents were aware about the preventive methods of weed management.
- The respondents of the state did not have any knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.

West Bengal

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	20	00	03	17	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	01	01	00	00	19
c	Is occurrence of weed species decreased than earlier?	20	00	18	02	00
d	Was hand weeding used as one of weed control methods?	20	03	17	00	00
e	Is hand weeding used currently by you?	20	10	10	00	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	20	04	14	02	00
g	Have you used chemical method of weed control?	20	03	17	00	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	20	00	20	00	00
i	If yes, have you applied recommended doses of herbicides?	20	00	20	00	00
j	Whether received information on suitable time and method of application of recommended herbicide?	20	00	20	00	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	20	04	16	00	00
l	Is the herbicide easily available in your locality?	20	07	13	00	00
m	Have you used demonstrated Improved Weed Management technologies later on?	20	12	08	00	00
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	04	02	02	00	16
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	20 17 06 14				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	20
r	Do you have any knowledge/ idea about HTCs/ Transgenic crops?	00	--	--	--	20
s	Have you any knowledge about super weeds?	00	--	--	--	20
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	20

- In **West Bengal**, all the respondents were agree that the weeds are major obstacle in crop production.
- 95% respondents felt that due importance was given to weed management in traditional farming.
- In the state, occurrence of weed species decreased than earlier and they were using hand weeding as one of the methods of weed control.
- All respondents were convinced that the IWM technologies control weeds better and give more yields than traditional methods. They were also using the chemical method.
- All the respondents of the state were received the information related to suitable herbicides and their doses. The respondents had followed the recommended doses of herbicides.
- All the respondents received the information related to time and method of application of herbicide and were followed the instructions provided by them.
- According to them, the herbicides were easily available in their locality and all of them used the demonstrated IWM technologies.
- Only 20% respondents were aware about preventive methods of weed management. Respondents were using all the methods of prevention with cleaning of seeds before sowing as major one.
- The respondents of the state didn't have any knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.

Assam

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	21	00	00	21	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	21	00	00	21	00
c	Is occurrence of weed species decreased than earlier?	21	21	00	00	00
d	Was hand weeding used as one of weed control methods?	21	00	00	21	00
e	Is hand weeding used currently by you?	21	12	09	00	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	21	00	00	21	00
g	Have you used chemical method of weed control?	21	00	00	21	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	21	00	00	21	00
i	If yes, have you applied recommended doses of herbicides?	21	00	00	21	00
j	Whether received information on suitable time and method of application of recommended herbicide?	21	00	00	21	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	21	00	00	21	00
l	Is the herbicide easily available in your locality?	21	21	00	00	00
m	Have you used demonstrated Improved Weed Management technologies later on?	21	00	00	21	00
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	21	21	00	00	00
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	21 21 21 21				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	21
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	21
s	Have you any knowledge about super weeds?	00	--	--	--	21
t	Do you have any knowledge/ idea about herbicide resistance weed?	21	21	00	00	

- In **Assam**, all the respondents strongly felt that the weeds are major obstacle in crop production and in traditional farming, due importance was not given to weed management.
- According to them, weed species decreased than earlier and all of them were using hand weeding as one of the weed control methods.
- They were also using chemical method of weed control. The information on suitable herbicides and their required doses were received by all the respondents of the state. They were following the recommended time and method of application of herbicides. The herbicides were easily available in their locality.
- They were using demonstrated IWM technologies and also using all preventive methods of weed control.
- The respondents of the state didn't have any knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops and super weeds, but having knowledge about herbicide resistance weed.

North Zone

Himachal Pradesh

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	20	03	07	10	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	15	01	12	02	05
c	Is occurrence of weed species decreased than earlier?	13	09	03	01	07
d	Was hand weeding used as one of weed control methods?	20	07	05	08	00
e	Is hand weeding used currently by you?	13	04	01	8	07
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	13	02	04	07	07
g	Have you used chemical method of weed control?	18	04	06	08	02
h	Have you received information on suitable herbicide and their required doses? Yes/No	18	01	05	12	02
i	If yes, have you applied recommended doses of herbicides?	17	03	04	10	03
j	Whether received information on suitable time and method of application of recommended herbicide?	15	01	07	07	05
k	If yes, have you followed the recommended time and method of application of particular herbicides?	14	04	05	05	06
l	Is the herbicide easily available in your locality?	15	02	08	05	05
m	Have you used demonstrated Improved Weed Management technologies later on?	14	02	07	05	06
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	18	01	13	04	02
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	17 09 17 12	-- -- -- --	-- -- -- --	-- -- -- --	
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds?	05	01	03	01	15
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	04	01	03	00	16
s	Have you any knowledge about super weeds?	03	01	02	00	17
t	Do you have any knowledge/ idea about herbicide resistance weed?	05	01	04	00	15

- In **Himachal Pradesh**, all respondents considered the weed as the major obstacle in crop production and only 75% of respondents felt that in traditional farming, weed management was not given due importance.
- According to 65% respondents, weed species decreased than earlier and all the respondents were using hand weeding as one of the weed control methods in past.
- 65% of them were currently using hand weeding for weed control and also convinced that the IWM technologies give better weed control and yield than traditional method.
- 90% respondents of the state were using chemical method of weed control and the information on suitable herbicides and their required doses were received by the respondents.
- 70% of respondents were following the recommended time and method of application of particular herbicide and 90 % were agree that the herbicides were easily available in their locality.
- 75% respondents were using demonstrated IWM technologies. However, The reasons for non-adoption by remaining are given as :
  i. Can't afford/purchase happy seeder
  ii. Lack of financial resources
  iii. No idea of IWM technology before visit to DWR
  iv. Due to unavailability of proper information
- 90% respondents were aware about the preventive methods of weed management. Among these methods, 85% respondents were using cleaning of seeds before sowing and cleaning of irrigation channels.
- 15 to 25% respondents of the state having knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.

Haryana

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	22	00	05	17	01
b	Do you feel that in traditional farming system, weed management was not given due importance?	12	03	08	01	11
c	Is occurrence of weed species decreased than earlier?	12	03	07	02	11
d	Was hand weeding used as one of weed control methods?	20	00	14	06	03
e	Is hand weeding used currently by you?	13	05	08	00	10
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	19	00	14	05	04
g	Have you used chemical method of weed control?	22	00	09	13	01
h	Have you received information on suita ble herbicide and their required doses? Yes/No	22	00	19	03	01
i	If yes, have you applied recommended doses of herbicides?	22	01	13	08	01
j	Whether received information on suitable time and method of application of recommended herbicide?	22	00	15	07	01
k	If yes, have you followed the recommended time and method of application of particular herbicides?	21	01	11	09	02
l	Is the herbicide easily available in your locality?	21	00	12	10	01
m	Have you used demonstrated Improved Weed Management technologies later on?	18	00	12	06	05
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	14	00	14	00	09
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	22 20 18 17				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	23
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	04	01	03	00	19
s	Have you any knowledge about super weeds?	02	02	00	00	21
t	Do you have any knowledge/ idea about herbicide resistance weed?	16	16	00	00	07

- In **Haryana**, 96% respondents considered the weed as the major obstacle in crop production.
- 52% respondents of the state felt that in traditional farming system, weeds were not given much importance and occurrence of weed species decreased than earlier.
- 87% respondents were using hand weeding as one of the weed control method. At present, only 57% respondents were using the method of hand weeding for controlling weeds.
- 83% respondents of the state were convinced that the IWM technologies control weeds better and give more yields than traditional methods.
- 96% respondents were using the chemical method of weed control and received the information on suitable herbicides, doses, time of application and method of application.
- Around 78% respondents of the state were using the demonstrated IWM technologies.
- 61% respondents were aware about preventive methods of weed management. Among these, 96% respondents were using cleaning of seeds before sowing, 87% were using cleaning of agricultural implements, 78% were using cleaning of irrigation channel and 74% were using decomposed organic matter in their fields as the preventive measure.
- The respondents of the state didn't have any knowledge about quarantine law or legal awareness about invasive weeds.
- Only 17% were having knowledge about HTCs/transgenic crops and 9% on super weeds. However 70% were having knowledge about herbicide resistance weed.

Punjab

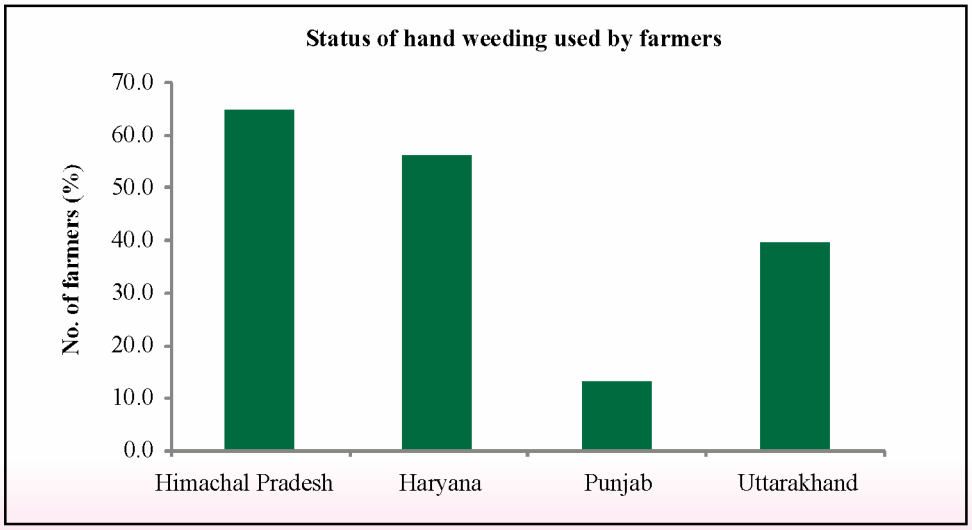
Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	22	00	03	19	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	22	07	07	08	00
c	Is occurrence of weed species decreased than earlier?	16	08	05	03	06
d	Was hand weeding used as one of weed control methods?	07	02	04	01	15
e	Is hand weeding used currently by you?	03	01	02	00	19
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	16	03	13	00	06
g	Have you used chemical method of weed control?	22	01	07	14	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	22	00	14	08	00
i	If yes, have you applied recommended doses of herbicide?	22	00	12	10	00
j	Whether received information on suitable time and method of application of recommended herbicide?	22	01	12	09	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	22	00	12	10	00
l	Is the herbicide easily available in your locality?	22	02	14	06	00
m	Have you used demonstrated Improved Weed Management technologies later on?	17	04	13	00	05
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	21	00	17	04	01
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	22 18 22 06				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	22
r	Do you have any knowledge/ idea about HTC's / Transgenic crops ?	03	00	03	00	19
s	Have you any knowledge about super weeds?	00	--	--	--	22
t	Do you have any knowledge/ idea about herbicide resistance weed?	05	05	00	00	17

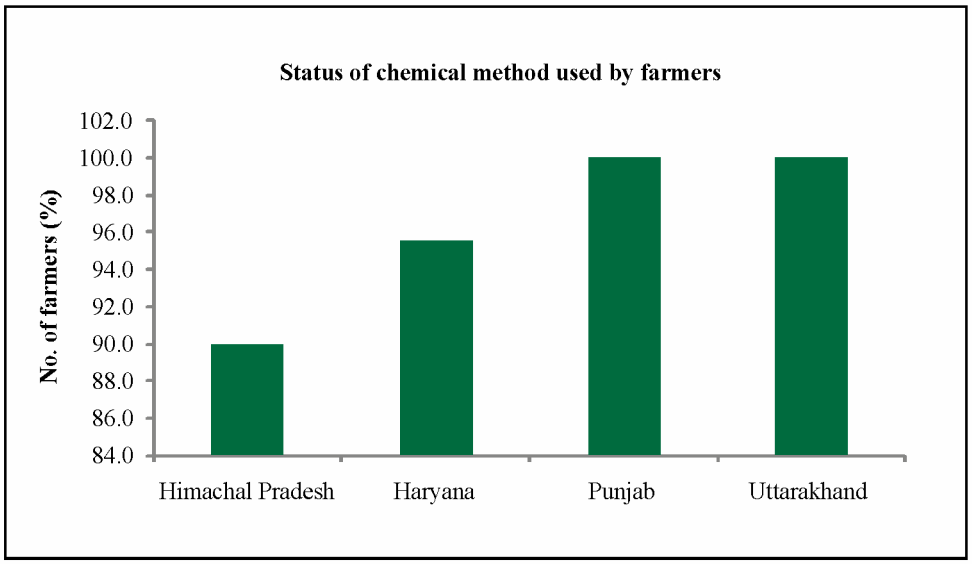
- In **Punjab**, all respondents opined that the weeds are the major obstacle in crop production and they felt that in traditional farming system, weeds were not given much importance.
- 73% felt that the weed species decreased in the area than earlier.
- Only 32% of respondents were using hand weeding as one of the methods of weed control and only 14% respondents were currently using this practice.
- 73% respondents were convinced that the IWM technologies give better weed control and yield than traditional method.
- All respondents were using the chemical method of weed control and all of them received the information on time, doses and application of herbicides and followed the same in their fields. Herbicides were easily available in their locality.
- 77% of respondents followed the IWM technologies.
- Cleaning of seeds before sowing and cleaning of irrigation channel are the preventive methods of weed control which they practiced.
- 82% were also performing cleaning of agricultural implements in the field.
- The respondents of the state didn't have any knowledge about quarantine law or legal awareness about invasive weeds and knowledge about super weeds.
- Only 14% were aware about HTCs/transgenic crops and 23% about herbicide resistance weed.

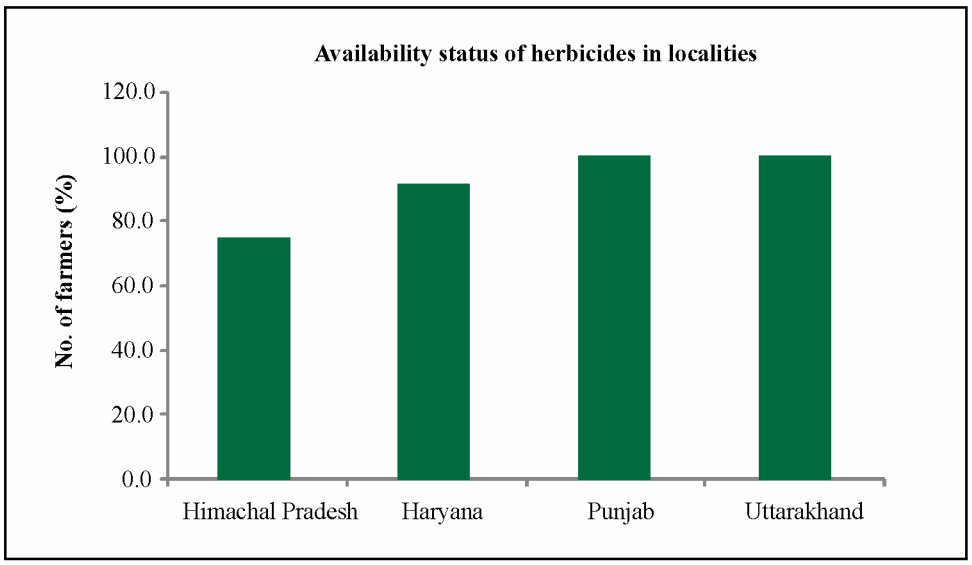
Uttarakhand

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	18	00	05	13	02
b	Do you feel that in traditional farming system, weed management was not given due importance?	20	01	10	09	00
c	Is occurrence of weed species decreased than earlier?	17	02	12	03	03
d	Was hand weeding used as one of weed control methods?	19	03	10	06	01
e	Is hand weeding used currently by you?	08	05	03	00	12
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	20	00	18	02	00
g	Have you used chemical method of weed control?	20	00	08	12	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	20	00	20	00	00
i	If yes, have you applied recommended doses of herbicide?	20	00	07	13	00
j	Whether received information on suitable time and method of application of recommended herbicide?	20	02	12	06	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	20	01	14	05	00
l	Is the herbicide easily available in your locality?	20	03	17	00	00
m	Have you used demonstrated Improved Weed Management technologies later on?	19	06	10	03	01
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	13	00	13	00	07
p	If yes, what type of preventive methods are used by you					03
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	17 15 16 17				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	20
r	Do you have any knowledge/ idea about HTCs/ Transgenic crops?	00	--	--	--	20
s	Have you any knowledge about super weeds?	02	02	00	00	18
t	Do you have any knowledge/ idea about herbicide resistance weed?	11	05	06	00	09

- In **Uttarakhand**, 90% of respondents opined that the weeds are the major obstacle in crop production.
- All the respondents of the state felt that in traditional farming system, they were not giving much importance to weed management.
- According to 85% of respondents, occurrence of weed species decreased than earlier and 95% of respondents were using hand weeding as one of the weed control methods. Currently, only 40% of respondents were using the method of hand weeding for controlling weeds.
- All respondents were convinced that the IWM technologies control weeds better and gives more yields than traditional methods.
- All respondents were using the chemical method of weed control and they received the information on time, method and doses of herbicides.
- Herbicides were easily available in their locality and 95% of them have used the demonstrated IWM technologies.
- About 65% of the respondents were aware about preventive methods of weed management. And 75-85% of respondents were using all the methods of prevention.
- Respondents of the state didn't have knowledge about quarantine law or legal awareness about invasive weeds and knowledge about HTCs/transgenic crop. And about 55% of respondents were aware about herbicide resistance weeds.




Status of chemical method used by farmers
No. of farmers (%)
102.0
100.0
98.0
96.0
94.0
92.0
90.0
88.0
86.0
84.0
Himachal Pradesh
Haryana
Punjab
Uttarakhand


Availability status of herbicides in localities
No. of farmers (%)
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Himachal Pradesh
Haryana
Punjab
Uttarakhand

South Zone

Telangana

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	10	00	01	09	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	04	00	01	03	06
c	Is occurrence of weed species decreased than earlier?	10	00	08	02	00
d	Was hand weeding used as one of weed control methods?	10	00	03	07	00
e	Is hand weeding used currently by you?	10	00	04	06	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	10	05	02	03	00
g	Have you used chemical method of weed control?	06	00	02	04	04
h	Have you received information on suitable herbicide and their required doses? Yes/No	09	00	00	09	01
i	If yes, have you applied recommended doses of herbicide?	09	00	02	07	01
j	Whether received information on suitable time and method of application of recommended herbicide?	09	00	00	09	01
k	If yes, have you followed the recommended time and method of application of particular herbicides?	09	00	00	09	01
l	Is the herbicide easily available in your locality?	05	00	01	04	05
m	Have you used demonstrated Improved Weed Management technologies later on?	03	00	00	03	07
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	06	00	06	00	04
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	10 03 10 01	-- -- -- --	-- -- -- --	-- -- -- --	
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	10
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	10
s	Have you any knowledge about super weeds?	00	--	--	--	10
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	10

- In **Telangana**, all the respondents agreed that the weeds are one of the major obstacles in crop production.
- 40% of the respondents felt that in traditional farming system, weeds were not given much importance and weed species decreased than earlier.
- All respondents had used the method of hand weeding as one of the methods of weed control and they were, currently using the same for controlling weeds.
- All respondents were convinced that IWM technologies give better weed control and yield than traditional method.
- 60% of respondents were using the chemical method for controlling weeds and 90% received the information on suitable herbicides and their doses from different sources. They also applied the herbicides at recommended doses.
- 90% followed the instructions on suitable time and method of application of recommended herbicides.
- About 50% of respondents felt that the herbicides were easily available in their locality and 30% of respondents followed the demonstrated IWM technologies.
- 60% respondents in the state were aware about preventive method of weed management. For preventive measure, cleaning of seeds before sowing and cleaning of irrigation channels were mostly followed by them.
- The respondents of the state didn't have any knowledge/idea about quarantine law or legal awareness about invasive weeds, HTCs/Transgenic crops/super weeds and herbicide resistance weed.

Karnataka

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	20	00	13	07	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	13	08	05	00	07
c	Is occurrence of weed species decreased than earlier?	20	03	17	00	00
d	Was hand weeding used as one of weed control methods?	20	00	09	11	00
e	Is hand weeding used currently by you?	20	03	14	03	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	14	01	11	02	06
g	Have you used chemical method of weed control?	20	03	08	09	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	20	00	08	12	00
i	If yes, have you applied recommended doses of herbicide?	20	00	08	13	00
j	Whether received information on suitable time and method of application of recommended herbicide?	20	00	07	13	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	20	00	09	11	00
l	Is the herbicide easily available in your locality?	20	00	01	19	00
m	Have you used demonstrated Improved Weed Management technologies later on?	10	03	06	01	10
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	17	00	17	00	03
p	If yes, what type of preventive methods are used by you					03
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	07 14 16 01				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	20
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	20
s	Have you any knowledge about super weeds?	00	--	--	--	20
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	20

- In **Karnataka**, all respondents were agree that the weeds are major obstacle in crop production and 65% of respondents felt that in traditional farming, weed management was given much importance.
- According to 65% respondents weed species decreased than earlier and all the respondents were using hand weeding as one of the methods of weed control. They were also using this practice currently.
- 70% of respondents were convinced that the IWM technologies give better weed control and yield than traditional method.
- They were using chemical method of weed control. The information on suitable herbicides and their required doses were received by all the respondents of the state. They were also following the recommended time and method of application of herbicides. The herbicides were easily available in their locality.
- About 50% respondents were using demonstrated IWM technologies and 85% respondents were aware about the preventive methods of weed management. Among preventive methods, 80% and 70% respondents were using cleaning of irrigation channel and cleaning of agricultural implements, respectively.
- The respondents of the state didn't have any knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.

Kerala

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	12	00	00	12	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	12	00	00	12	00
c	Is occurrence of weed species decreased than earlier?	00	00	00	00	12
d	Was hand weeding used as one of weed control methods?	12	00	00	12	00
e	Is hand weeding used currently by you?	00	00	00	00	12
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	12	00	06	06	00
g	Have you used chemical method of weed control?	12	00	00	12	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	12	00	12	00	00
i	If yes, have you applied recommended doses of herbicide?	12	00	11	01	00
j	Whether received information on suitable time and method of application of recommended herbicide?	12	00	00	12	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	12	00	12	00	00
l	Is the herbicide easily available in your locality?	12	00	12	00	00
m	Have you used demonstrated Improved Weed Management technologies later on?	12	00	12	00	00
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	12	00	12	00	00
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	12 12 12 12				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	12
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	12
s	Have you any knowledge about super weeds?	00	--	--	--	12
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	12

- In **Kerala**, all the respondents were agree that the weeds are the major obstacle in crop production and in traditional farming system, they were not giving much importance to weed management.
- In the state, every respondents felt that occurrence of weed species did not decrease than earlier and hand weeding was used as one of the methods of weed control. But presently, they were not using hand weeding for controlling weeds.
- All respondents of the state were convinced that the IWM technologies control weeds better and give more yields than traditional methods. They were also using the chemical method for weed control.
- All respondents of the state received the information related to suitable herbicides and their doses. They had followed the recommended doses of herbicides.
- All respondents received the information related to time and method of application of herbicides and also followed the instructions provided by them.
- According to them herbicides were easily available in their locality and all of them used the demonstrated IWM technologies.
- All respondents were aware about preventive methods of weed management. They were using all the methods of prevention.
- The respondents of the state didn't have any knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.

Puducherry

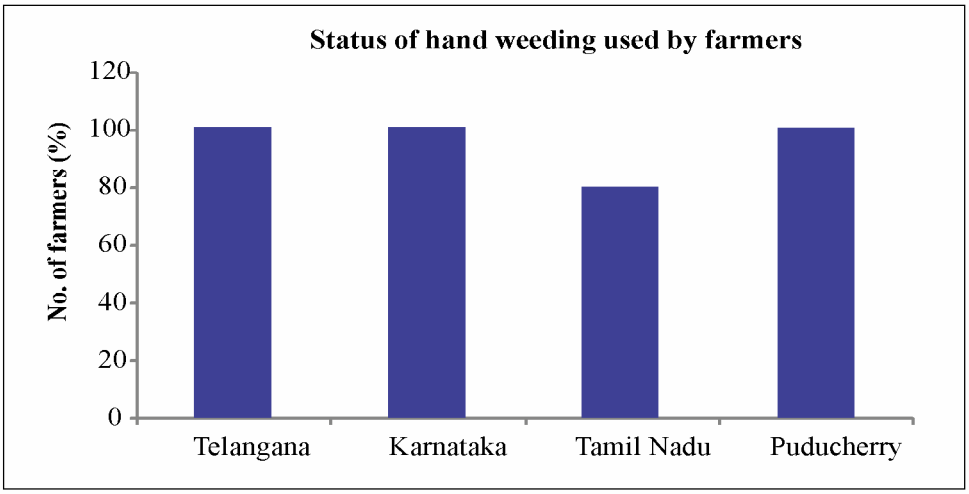
Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	10	01	02	07	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	04	01	03	00	06
c	Is occurrence of weed species decreased than earlier?	04	01	02	01	06
d	Was hand weeding used as one of weed control methods?	09	01	07	01	01
e	Is hand weeding used currently by you?	10	01	08	01	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	06	00	06	00	04
g	Have you used chemical method of weed control?	07	01	06	00	03
h	Have you received information on suitable herbicide and their required doses? Yes/No	07	01	06	00	03
i	If yes, have you applied recommended doses of herbicide?	06	01	05	00	04
j	Whether received information on suitable time and method of application of recommended herbicide?	06	00	05	01	04
k	If yes, have you followed the recommended time and method of application of particular herbicides?	06	00	06	00	04
l	Is the herbicide easily available in your locality?	09	00	09	00	01
m	Have you used demonstrated Improved Weed Management technologies later on?	02	00	02	00	08
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	01	00	01	00	09
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii)Cleaning of irrigation channel (iv)Use of decomposed orga nic matter in the field	04 04 00 09				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	00	--	--	--	10
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	10
s	Have you any knowledge about super weeds?	00	--	--	--	10
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	10

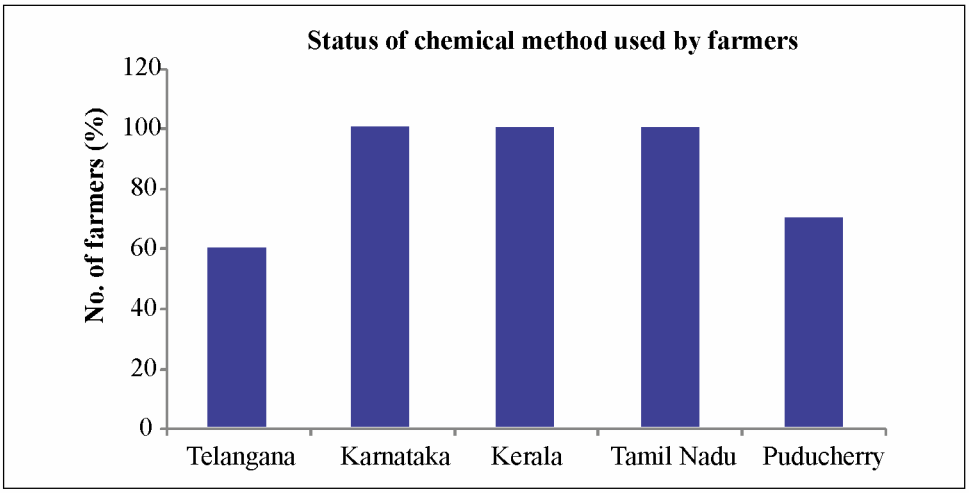
- In **Puducherry**, all respondents were agree that the weeds are the major obstacle in crop production but only 40% of respondents felt that in traditional farming system, they were not giving much importance to weed management and were agree that weed species did not decrease in the area.
- 90% respondents were using hand weeding as one of the methods of weed control. During survey period , all respondents were using this practice.
- About 60% respondents were convinced that the IWM technologies give better weed control and yield than traditional method.
- 70% respondents in the state were using the chemical method of weed control and 60% of them recieved information regarding time, doses and application of herbicides.
- According to 90% respondents, herbicides were easily available in locality.
- Only 20% of respondents in the state were following the IWM technologies.
- Respondents were using three methods of prevention viz. use of decomposed organic matter in the field (90 %), cleaning of seeds before sowing (40%) and cleaning of agricultural implements in the field (40%).
- The respondents of the state didn't have any knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.

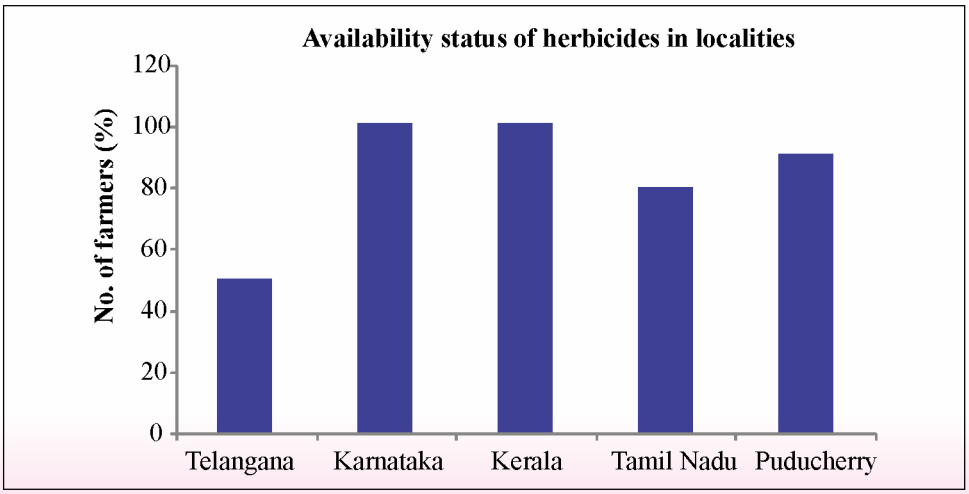
Tamil Nadu

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	10	00	05	05	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	03	03	00	00	07
c	Is occurrence of weed species decreased than earlier?	06	03	03	00	04
d	Was hand weeding used as one of weed control methods?	09	01	03	05	01
e	Is hand weeding used currently by you?	08	05	03	00	02
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	06	01	04	01	04
g	Have you used chemical method of weed control?	10	03	04	03	00
h	Have you received information on suitable herbicide and their required doses? Yes/No	05	00	05	00	05
i	If yes, have you applied recommended doses of herbicide?	10	00	06	04	00
j	Whether received information on suitable time and method of application of recommended herbicide?	09	01	05	03	01
k	If yes, have you followed the recommended time and method of application of particular herbicides?	09	00	05	04	01
l	Is the herbicide easily available in your locality?	08	02	03	03	02
m	Have you used demonstrated Improved Weed Management technologies later on?	04	01	03	00	06
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	05	00	05	00	05
p	If yes, what type of preventive methods are used by you					04
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	04 06 06 02				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds ?	04	01	00	00	06
r	Do you have any knowledge/ idea about HTCs/ Transgenic crops?	04	00	00	04	06
s	Have you any knowledge about super weeds?	00	--	--	--	10
t	Do you have any knowledge/ idea about herbicide resistance weed?	01	01	00	00	09

- In **Tamil Nadu**, all respondents considered the weeds as the major obstacle in crop production.
- Only 30% of them felt that in traditional farming system, not much importance was given to weed management.
- According to 60% of respondents, occurrence of weed species decreased than earlier and 90% of respondents were using hand weeding as one of the weed control method. At survey time, 80% of respondents were using the method of hand weeding for controlling weeds.
- 60% respondents of the state were convinced that the IWM technologies control weeds better and provide more yields than traditional methods.
- All respondents were using the chemical method of weed control but only 50% respondents received the information on time of application, methods and doses of herbicide.
- All the respondents had applied the recommended doses of herbicides.
- According to 80% of the respondents herbicides were easily available in their locality and 40% of them used the demonstrated IWM technologies.
- The reason for non-adoption were lack of demonstration as well as non-availability of proper information.
- About 50% of the respondents were aware about preventive methods of weed management. Respondents were using all the methods of prevention.
- 40% respondents had knowledge about quarantine law or legal awareness about invasive weeds and knowledge about HTCs/transgenic crops. The respondents did not have any idea about super weeds and herbicide resistance weed.


Status of hand weeding used by farmers
No. of farmers (%)
120
100
80
60
40
20
0
Telangana
Karnataka
Tamil Nadu
Puducherry


Status of chemical method used by farmers
No. of farmers (%)
120
100
80
60
40
20
0
Telangana
Karnataka
Kerala
Tamil Nadu
Puducherry


Availability status of herbicides in localities
No. of farmers (%)
120
100
80
60
40
20
0
Telangana
Karnataka
Kerala
Tamil Nadu
Puducherry

West Zone

Gujarat

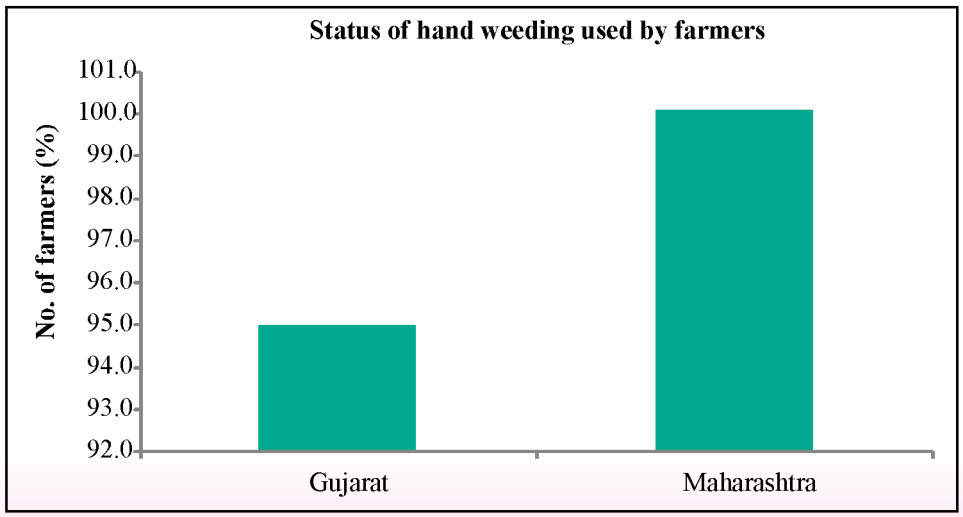
Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	20	00	05	15	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	17	01	11	05	03
c	Is occurrence of weed species decreased than earlier?	04	01	03	00	16
d	Was hand weeding used as one of weed control methods?	20	02	14	04	00
e	Is hand weeding used currently by you?	19	07	08	04	01
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	19	01	15	03	01
g	Have you used chemical method of weed control?	19	01	13	05	01
h	Have you received information on suitable herbicide and their required doses? Yes/No	19	01	18	01	01
i	If yes, have you applied recommended doses of herbicide?	19	00	16	03	01
j	Whether received information on suitable time and method of application of recommended herbicide?	19	00	17	02	01
k	If yes, have you followed the recommended time and method of application of particular herbicides?	17	00	15	02	03
l	Is the herbicide easily available in your locality?	18	00	15	03	02
m	Have you used demonstrated Improved Weed Management technologies later on?	20	01	17	02	00
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	19	00	19	00	01
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	20 13 18 16				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds?	01	00	01	00	19
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	04	02	02	00	16
s	Have you any knowledge about super weeds?	02	01	01	00	18
t	Do you have any knowledge/ idea about herbicide resistance weed?	02	02	00	00	18

- In **Gujarat**, all respondents considered the weeds as the major obstacle in crop production.
- 85% respondents felt that in traditional farming system weed management was not given much importance than other aspects of crop production.
- According to 20% respondents of the state, occurrence of weed species decreased than earlier.
- All respondents were using hand weeding as one of the methods of weed control. At survey time, 95% respondents were using the method of hand weeding for controlling weeds.
- 95% respondents of the state were convinced that the IWM technologies control weeds better and give more yields than traditional methods. They were also using the chemical method.
- 95% respondents received the information on time and method of application of herbicide and 85% of them followed the instructions provided by them.
- According to 90% respondents, the herbicides were easily available in their locality.
- All the respondents used the demonstrated IWM technologies.
- 95% respondents were aware about preventive methods of weed management. They were using all the methods of prevention.
- Only 10-20% respondents of the state had knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.

Maharashtra

Sr. No.	Question	Yes	Scores			No
			Low	Moderate	High	
a	Do you agree that weeds are one of the major obstacles in crop production?	11	00	10	01	00
b	Do you feel that in traditional farming system, weed management was not given due importance?	11	00	11	00	00
c	Is occurrence of weed species decreased than earlier?	00	--	--	--	11
d	Was hand weeding used as one of weed control methods?	11	00	00	11	00
e	Is hand weeding used currently by you?	11	00	00	11	00
f	Are you convinced that Improved Weed Management technologies give better weed control and yield than traditional method? If yes, indicate the yield increase.	11	00	11	00	00
g	Have you used chemical method of weed control?	00	--	--	--	11
h	Have you received information on suitable herbicide and their required doses? Yes/No	11	00	11	00	00
i	If yes, have you applied recommended doses of herbicide?	11	00	11	00	00
j	Whether received information on suitable time and method of application of recommended herbicide?	11	00	11	00	00
k	If yes, have you followed the recommended time and method of application of particular herbicides?	11	00	11	00	00
l	Is the herbicide easily available in your locality?	00	--	--	--	11
m	Have you used demonstrated Improved Weed Management technologies later on?	10	00	10	00	01
n	If not, please specify reasons.					
o	Are you aware about preventive methods of weed management?	11	00	11	00	00
p	If yes, what type of preventive methods are used by you					
	(i) Cleaning of seeds before sowing (ii) Cleaning of agricultural implements (iii) Cleaning of irrigation channel (iv) Use of decomposed organic matter in the field	11 09 05 04				
q	Have you any knowledge about quarantine law or legal awareness about invasive weeds?	00	--	--	--	11
r	Do you have any knowledge/ idea about HTCs / Transgenic crops?	00	--	--	--	11
s	Have you any knowledge about super weeds?	00	--	--	--	11
t	Do you have any knowledge/ idea about herbicide resistance weed?	00	--	--	--	11

- In **Maharashtra**, all respondents considered the weed as the major obstacle in crop production but in traditional farming, weed management was not given much importance.
- In the state, weed species did not decrease than earlier and they were using hand weeding as one of the methods of weed control which they are also practicing currently.
- All respondents were convinced that the IWM technologies give better weed control and yield than traditional method.
- Respondents of the state were not using chemical method of weed control.
- Information on suitable herbicides and their required doses were received by all the respondents and they were following the recommended time and method of application of particular herbicide.
- The herbicides were not easily available in their locality and it was the main reason for not using chemical method of weed control.
- 91% respondents were using demonstrated IWM technologies.
- All respondents were using preventive methods of weed control. All respondents were using cleaning of seeds before sowing, 82% were using cleaning of agricultural implements, 45% were using cleaning of irrigation channel and 36% were using decomposed organic matter in the field.
- The respondents of the state didn't have any knowledge about quarantine law or legal awareness about invasive weeds, HTCs/transgenic crops, super weeds and herbicide resistance weed.



7. Awareness and adoption level of farmers in relation to weed management technologies

This section illustrates the awareness and adoption level of the respondent with respect to weed management technologies. They were asked about betterment and ease of herbicide application, best method of weed control; use of integrated methods and their results; ITK prevailing in their area for weed management; economical and time saving methods for weed control, appropriate time of application of pre-and post-emergence herbicides, presence of soil moisture during herbicide application, techniques and precautions during the spraying of herbicides; any spurious/ adulterated chemical and their availability in their locality, dose/ time followed during spraying; proper dose of herbicides, proper nozzle for spraying herbicides, application technique of herbicides; yield loss occurred due to weeds, as well as other harmful effects of weeds.

Central Zone

Madhya Pradesh

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy ?	89	03
b	Whether mechanical weeding/hand weeding is better than herbicide?	15	77
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/ hand weeding) give better results.	86	06
d	Whether use of integrated weed management methods is time consuming and costly affairs?	28	64
e	Is there any ITK prevailing in your area for weed management?	18	74
f	Which one is economical and time saving: Chemical/ Mechanical/ Manual methods?	Chemical-89 Manual-01 Mechanical-0	02
g	Do you * know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	51	41
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	86	06
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	63	29
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather.	87	05
k	Any precautionary measure used during spraying (Mask/cloth/gloves)	35	57
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	23	69
m	Who gave advise for what chemical in which crop, what dose/ time to be followed?	DWR-79 Progressive farmer-03 Local dealer-06 Private agencies-01	03

Table continue...

n	Whether spraying is done by yourself ? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	69	23
o	Are you using separate nozzle like flat fan for spraying herbicides.	39	53
p	Whether herbicide container is destroyed after use?	63	29
q	Whether herbicide is sprayed with (by mixing) other pesticides?	12	80
r	If yes, source of recommendation (Please tick on appropriate one-Self decision/herbicide dealer/friend farmer/any other)	13	79
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20 -30% &<30%?**	**>30% -04 <30% - 86**	02
t	Whether weeds provide shelter to insect, pest?	39	53
u	Do you think weed's presence deteriorates the seed quality?	89	03

* You represents farmers

- In **Madhya Pradesh,** 97% respondents considered the herbicide as better and easy method to manage weeds and only 16% respondents opined that the mechanical weeding/hand weeding is better than herbicides which implies most of the farmers prefer herbicides to control weeds because of its easy application and quick action.
- 93% respondents were agree that integrated approaches (herbicide/mechanical weeding/hand weeding) of weed control give better results. But according to 30% respondents, this method is time consuming and costly than others.
- According to 20% respondents, ITK is used in their area for weed management.
- 97% respondents preferred chemical method for weed control as it is economical and time saving than other two methods.
- In the state, 57.3 and 93.5% respondents were very well aware about the appropriate time of application of pre-emergence and post-emergence herbicide, respectively.
- 68.5% respondents of the state felt the necessity of having sufficient moisture in soil during application of herbicides and 95% respondents generally avoid herbicide spray during high speed wind & cloudy weather.
- Only 38% respondents used the precautionary measure during spraying and 25% heard about spurious/adulterated chemical and their availability in their local market.
- 75% respondents used to spray herbicides themselves. About 42% were using separate nozzle like flat fan for spraying herbicides and 69% respondents used to destroy the herbicides container after spraying.
- 13% of respondents used to mix herbicides with other pesticides.
- According to 93% respondents, the yield loss occurred due to weeds was less than 30% and it provides shelter to insect and pest (42.39%), and also deteriorates the seed quality (96.73 %).

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**20**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**00**	**20**
c	Whether use of integrated weed management methods (herbicide/ mechanical weeding/hand weeding) give better results?	**20**	**00**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**00**	**20**
e	Is there any ITK prevailing in your area for weed management?	**00**	**20**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-20 Manual- 0 Mechanical- 0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**20**	**00**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**20**	**00**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**20**	**00**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**20**	**00**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**20**	**00**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**20**	**00**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR-20 Progressive farmer-0 Local dealer-0 Private agencies-0**	**00**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**20**	**00**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**20**	**00**
p	Whether herbicide container is destroyed after use?	**20**	**00**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**00**	**20**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**00**	**20**
s	How much normally yield loss occurred due to weeds? **>10%, 10 - 20%, 20-30% &<30%?**	**>30% - 00 <30% -20**	**00**
t	Whether weeds provide shelter to insect, pest?	**20**	**00**
u	Do you think weed's presence deteriorates the seed quality?	**20**	**00**

- In **Bihar**, all respondents were in opinion that with the use of integrated weed management methods (herbicide/mechanical weeding/hand weeding), better results can be obtained. They also opined that these methods are not time consuming and not much costly than other methods.
- No ITK for weed management was used in their area.
- In the state, herbicides are not mixed with other pesticides.
- According to all respondents, the yield loss occurred due to weeds was less than 30% and it also provides shelter to insect and pest, also deteriorates the seed quality.

Chhattisgarh

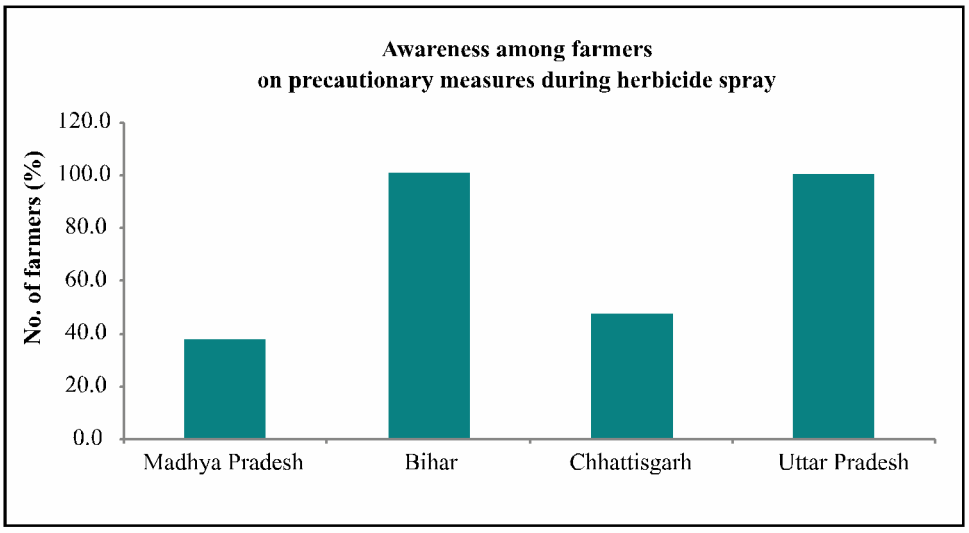
Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	18	01
b	Whether mechanical weeding/hand weeding is better than herbicides?	04	15
c	Whether use of integrated weed management methods (herbicide/ mechanical weeding/hand weeding) give better results?	19	00
d	Whether use of integrated weed management methods is time consuming and costly affairs?	15	04
e	Is there any ITK prevailing in your area for weed management?	00	19
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	Chemical-0 Manual-0 Mechanical-19	00
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	19	00
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	19	00
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	19	00
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	14	05
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	09	10
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	00	19
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	DWR/RAEO- 19 Progressive farmer-0 Local dealer-0 Private agencies-0	00
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	17	02
o	Are you using separate nozzle like flat fan for spraying herbicides.	06	13
p	Whether herbicide container is destroyed after use?	12	07
q	Whether herbicide is sprayed with (by mixing) other pesticides?	10	09
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	01	18
s	How much normally yield loss occurred due to weeds? >10%, 10-20%, 20-30% &<30%?	>30% -00 <30% - 19	00
t	Whether weeds provide shelter to insect, pest?	19	00
u	Do you think weed's presence deteriorates the seed quality?	19	00

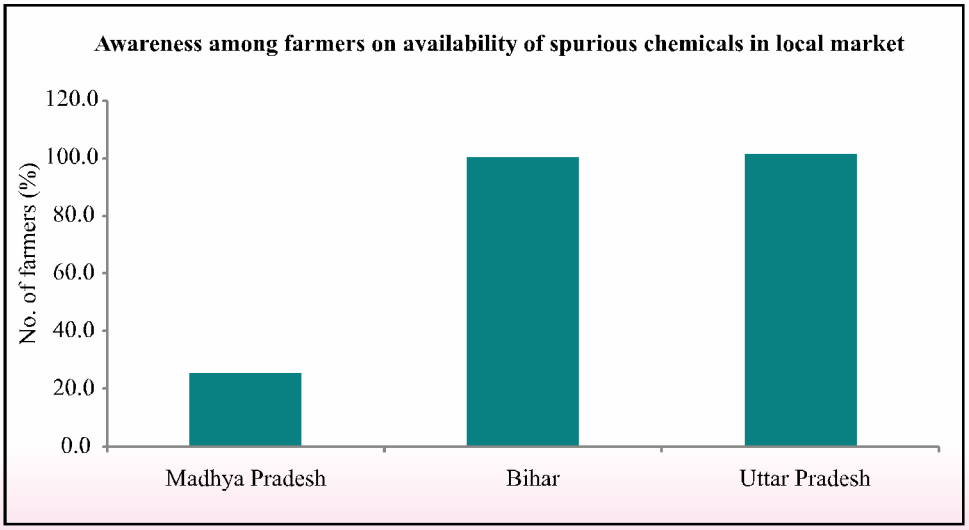
- In **Chhattisgarh,** 95% respondents found the herbicide application better and easy to manage weeds and only 21% respondents felt that mechanical weeding/hand weeding is better than herbicides.
- No ITK for weed management was being used in the state.
- 73.7% respondents used to avoid herbicide spray during high speed wind & cloudy weather.
- About 47% respondents were using the precautionary measures during spraying.
- 89.5% respondents used to spray herbicide themselves. About 32% were using separate nozzle like flat fan for spraying herbicides and 63% respondents used to destroy the herbicide container after spraying. But only 52.6% of respondents used to mix herbicides with other pesticides.
- According to them the yield loss occurred due to weeds was less than 30% .

Uttar Pradesh

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**20**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**02**	**18**
c	Whether use of integrated weed management methods (herbicide/ mechanical weeding/hand weeding) give better results?	**20**	**00**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**00**	**20**
e	Is there any ITK prevailing in your area for weed management?	**20**	**00**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-20 Manual-0 Mechanical-0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**20**	**00**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**20**	**00**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**20**	**00**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**20**	**00**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**20**	**00**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**20**	**00**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR-20 Progressive farmer-0 Local dealer-0 Private agencies-0**	**00**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**20**	**00**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**20**	**00**
p	Whether herbicide container is destroyed after use?	**20**	**00**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**01**	**19**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**00**	**20**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -01 <30% - 19**	**00**
t	Whether weeds provide shelter to insect, pest?	**20**	**00**
u	Do you think weed's presence deteriorates the seed quality?	**19**	**01**

- In **Uttar Pradesh**, all respondents were well aware about appropriate time of application of pre-emergence and post-emergence herbicide and were also agree that soil must have sufficient moisture during application of herbicides.
- ITK were also practicised by them for weed management.
- According to 95% respondents, the yield loss occurred due to weeds was less than 30% and felt that weed provides shelter to insect and pest also deteriorates the seed quality (95 %).
- Respondents were using only flat fan type of nozzle for herbicide applications.





East Zone

Odisha

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**20**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**00**	**20**
c	Whether use of integrated weed management methods (herbicide/ mechanical weeding/hand weeding) give better results?	**20**	**00**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**17**	**03**
e	Is there any ITK prevailing in your area for weed management?	**01**	**19**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-20 Manual-0 Mechanical-0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**20**	**00**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**19**	**01**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**20**	**00**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**20**	**00**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**09**	**11**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**16**	**04**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR/SAU- 20 Progressive farmer-0 Local dealer-0 Private agencies-0**	**00**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**15**	**05**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**18**	**02**
p	Whether herbicide container is destroyed after use?	**09**	**11**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**01**	**19**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**00**	**20**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -01 <30% - 19**	**00**
t	Whether weeds provide shelter to insect, pest?	**17**	**03**
u	Do you think weed's presence deteriorates the seed quality?	**20**	**00**

- In **Odisha**, all the respondents opined that there should be use of integrated approach (herbicide/mechanical weeding/hand weeding) for getting better results and 85% felt that the integrated weed management method is time consuming and costly than other methods.
- Only 5% found ITKs for weed management prevailing in their locality.
- In the state, respondents were having knowledge about appropriate time of application of pre-emergence herbicide and 95% about appropriate time of application of post-emergence herbicide.
- About 45% respondents were using precautionary measures during spraying and 80% heard about spurious/adulterated chemical and their availability in local market.
- 75% of respondents were performing the task of spraying themselves and using separate nozzle like flat fan for herbicides and 95% destroyed herbicide container after spraying. Only 5% were not mixing herbicide with other pesticides.
- According to 95% of respondents, the yield loss occurred due to weeds was less than 30%.

Jharkhand

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	22	00
b	Whether mechanical weeding/hand weeding is better than herbicides?	09	13
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	22	00
d	Whether use of integrated weed management methods is time consuming and costly affairs?	09	13
e	Is there any ITK prevailing in your area for weed management?	22	00
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	Chemical-22 Manual-0 Mechanical-0	00
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	22	00
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	22	00
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	22	00
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	22	00
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	22	00
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	07	15
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	DWR/SAU-22 Progressive farmer-0 Local dealer-0 Private agencies-0	00
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	22	00
o	Are you using separate nozzle like flat fan for spraying herbicides?	19	03
p	Whether herbicide container is destroyed after use?	22	00
q	Whether herbicide is sprayed with (by mixing) other pesticides?	03	19
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	00	22
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	>30% -00 <30% - 22	00
t	Whether weeds provide shelter to insect, pest?	22	00
u	Do you think weed's presence deteriorates the seed quality?	22	00

- In **Jharkhand,** all the respondents were in opinion that the herbicide application is better and easy to manage weeds and only 41% felt that mechanical weeding/hand weeding is better than herbicides.
- According to them integrated weed management methods are time consuming and costly affairs.
- All respondents were using the precautionary measure during spraying and only 32% of the respondent heard about spurious /adulterated chemical available in their locality.
- All respondents were performing the task of spraying themselves.
- 86% respondents were also using separate nozzle like flat fan for spraying herbicides.
- Only 13.6% respondents were spraying herbicide with other pesticides, which indicates that most of them are aware about spraying technique of herbicides.

West Bengal

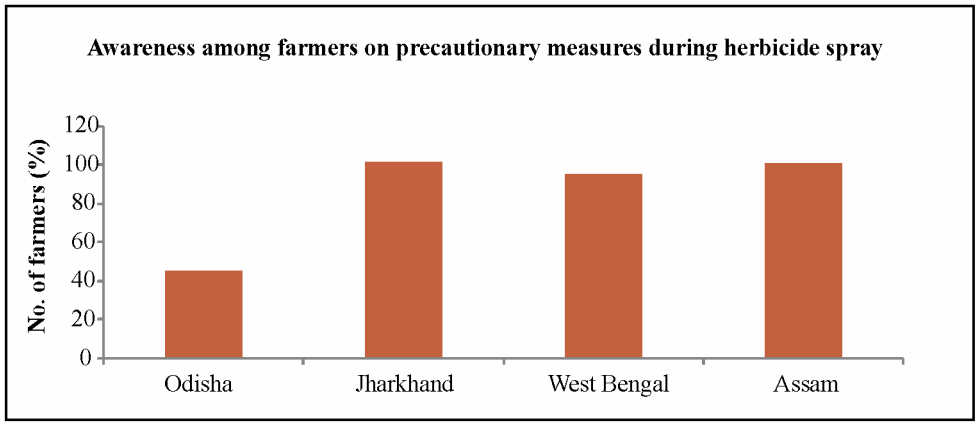
Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**12**	**08**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**00**	**20**
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	**20**	**00**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**05**	**15**
e	Is there any ITK prevailing in your area for weed management?	**00**	**20**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-20 Manual-0 Mechanical-0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**17**	**03**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**16**	**04**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**14**	**06**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**20**	**00**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**19**	**01**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**08**	**12**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR/AICRP-WM- 20 Progressive farmer-0 Local dealer-0 Private agencies-0**	**00**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**10**	**10**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**16**	**04**
p	Whether herbicide container is destroyed after use?	**18**	**02**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**01**	**19**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**00**	**20**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -00 <30% - 20**	**00**
t	Whether weeds provide shelter to insect, pest?	**19**	**01**
u	Do you think weed's presence deteriorates the seed quality?	**14**	**06**

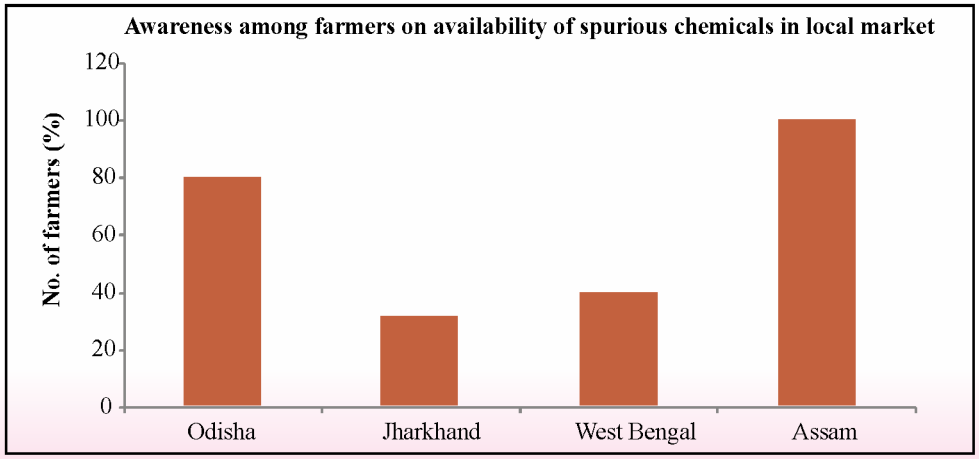
- In **West Bengal,** 60% respondents found the herbicide application better and easy to manage weeds and none of the respondents were in opinion that mechanical weeding/hand weeding was better than herbicides.
- ITK was not being used in the state for weed management.
- All respondents realized that the chemical method for controlling weeds is economical and time saving.
- 85 and 80% respondents were very well aware about appropriate time of application of pre-emergence and post-emergence herbicide, respectively.
- 70% respondents agree to have sufficient moisture in soil during application of herbicides and all of them have avoided herbicide spray during high speed wind & cloudy weather.
- 95% respondents were using the precautions during spraying and only 40% heard about spurious/adulterated chemical and their availability in local market.
- 80% respondents were using separate nozzle like flat fan for spraying herbicides and 90% destroyed the container after spraying.
- There were only 5% respondents who were mixing herbicide with other pesticides.
- According to 70% respondents, the weeds can deteriorates the seed quality.
- The overall conclusion is that all respondents were well aware about weed management technologies.

Assam

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**20**	**01**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**00**	**21**
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	**21**	**00**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**00**	**21**
e	Is there any ITK prevailing in your area for weed management?	**00**	**21**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-21 Manual-0 Mechanical-0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**21**	**00**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**21**	**00**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**21**	**00**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**21**	**00**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**21**	**00**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**21**	**00**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR/SAU-20 Progressive farmer-0 Local dealer-0 Private agencies-0**	**01**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**21**	**00**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**21**	**00**
p	Whether herbicide container is destroyed after use?	**16**	**05**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**00**	**21**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**01**	**20**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -01 <30% - 20**	**00**
t	Whether weeds provide shelter to insect, pest?	**21**	**00**
u	Do you think weed's presence deteriorates the seed quality?	**21**	**00**

- In **Assam**, 95% respondents found that herbicide application is better and easy to manage weeds and none of them felt that mechanical weeding/hand weeding is better than herbicides used.
- No ITK was being used in the state for weed management.
- All respondents were doing spraying themselves and were using separate nozzle like flat fan for spraying herbicides but 80% of them used to destroy the herbicide container after spraying.
- None of the respondent used to mix herbicide with other pesticides.
- According to 95% of respondents, the yield loss occurred due to weeds was less than 30%.
- All the respondents opined that it provides shelter to insect and pest and deteriorates the seed quality also.
- Overall results showed the high awareness level of weed management technologies among farmers in the state.





North Zone

Himachal Pradesh

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**15**	**05**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**05**	**15**
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	**18**	**02**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**08**	**12**
e	Is there any ITK prevailing in your area for weed management?	**02**	**18**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Yes - 02 Chemical- 11 Manual-02 Mechanical-02**	**03**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**14**	**06**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**14**	**06**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**17**	**03**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**13**	**07**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**07**	**13**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**04**	**16**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR-09 Progressive farmer-01 Local dealer-02 Private agencies-02**	**06**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**14**	**06**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**11**	**09**
p	Whether herbicide container is destroyed after use?	**05**	**15**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**02**	**18**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**01**	**19**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -01 <30% - 18**	**01**
t	Whether weeds provide shelter to insect, pest?	**09**	**11**
u	Do you think weed's presence deteriorates the seed quality?	**10**	**10**

- In **Himachal Pradesh**, 75% respondents found the herbicide application better and easy to manage weeds and only 25% respondent felt that the mechanical weeding/hand weeding was better than herbicides.
- 90% respondents opined that integrated methods (herbicide/mechanical weeding/hand weeding) may be used for better results wheareas, 40% felt that the integrated weed management method is time consuming and costly than other methods.
- Only 10% were using ITK for weed management.
- 55% respondents found chemical method, economical and time saving for controlling weeds than other two methods.
- In the state, 70% respondents were having knowledge about appropriate time of application of pre-emergence and post-emergence herbicide.
- 85% respondents realized the necessity of sufficient moisture in soil during application of herbicides.
- 65% respondents avoided herbicide spray during high speed wind & cloudy weather.
- Only 35% respondents were taking precautions during spraying and 20% have knowledge about spurious/adulterated chemical and their availability in local market.
- 70% respondents used to perform spraying themselves and using separate nozzle like flat fan for herbicides and only 25% used to destroy herbicide container after spraying.
- In the state, only 10% were mixing herbicide with other pesticides.
- According to 90% of respondents, the yield loss occurred due to weeds was less than 30 %.
- 45% of them were agree that weed provides shelter to insect/pest and 50% respondents opined that the weeds deteriorate the seed quality.
- Overall results indicated the moderate level of awareness level of farmers in the state.

Haryana

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	21	02
b	Whether mechanical weeding/hand weeding is better than herbicides?	11	12
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	22	01
d	Whether use of integrated weed management methods is time consuming and costly affairs?	20	03
e	Is there any ITK prevailing in your area for weed management?	01	22
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	Chemical-22 Manual-0 Mechanical-0	01
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	21	02
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	20	03
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	22	01
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather ?	22	01
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	06	17
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	15	08
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	DWR-19 Progressive farmer-0 Local dealer-03 Private agencies-0	02
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	17	06
o	Are you using separate nozzle like flat fan for spraying herbicides ?	19	04
p	Whether herbicide container is destroyed after use?	13	10
q	Whether herbicide is sprayed with (by mixing) other pesticides?	02	21
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	07	16
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	>30% -04 <30% - 17	02
t	Whether weeds provide shelter to insect, pest?	19	04
u	Do you think weed's presence deteriorates the seed quality?	21	02

- In **Haryana,** 91% respondents felt that the herbicide application is better and easy to manage weeds and 48% respondents realized that mechanical weeding/hand weeding is better than herbicides used.
- 96% respondents opined that use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results but according to 87% respondents it is time consuming and costly affairs.
- About 91 and 87% respondents in the state were aware about appropriate time of application of pre-emergence and post-emergence herbicide, respectively.
- 95.7% realized the necessity of sufficient moisture in soil during application of herbicides and avoided herbicide spray during high speed wind & cloudy weather.
- Only 26% of respondents were using the precautionary measure during spraying and 65.2% of the respondent heard about spurious/adulterated chemical in their locality.
- 74% respondents used to spray themselves and 83% respondents were using separate nozzle like flat fan for spraying herbicides.
- 56.5% respondents used to destroy the herbicide container after spraying.
- Only 8.7% respondents used to mix herbicide with other pesticides.
- According to 73.9% of the respondents, the yield loss occurred due to weeds was less than 30%.
- 82.6% respondents realized that the weeds provide shelter to insect/pest and 91.3% respondents opined that weeds can deteriorates the seed quality.
- Overall, moderate level of awareness level was observed in the state.

Punjab

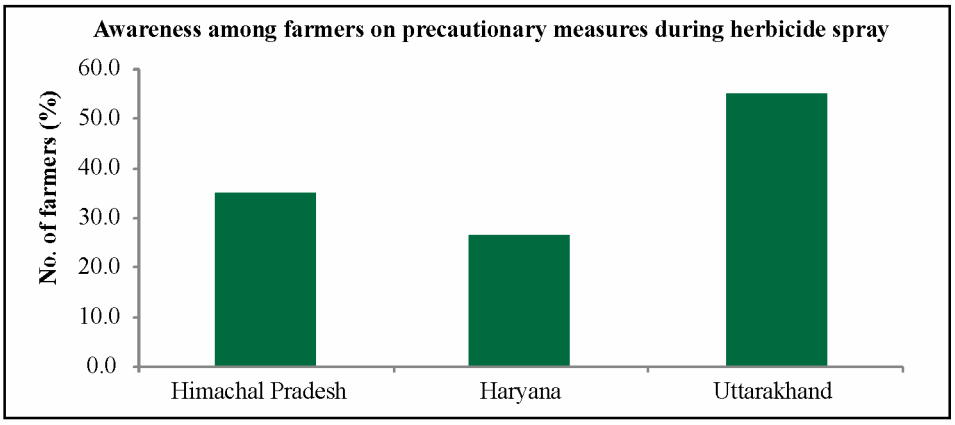
Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**22**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**02**	**20**
c	Whether use of integrated weed management methods (herbicide/ mechanical weeding/hand weeding)give better results?	**18**	**04**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**16**	**06**
e	Is there any ITK prevailing in your area for weed management?	**00**	**22**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-19 Manual-0 Mechanical-03**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**08**	**14**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**05**	**17**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**06**	**16**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**22**	**00**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**00**	**22**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**18**	**04**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR/SAU/KVK-21 Progressive farmer-0 Local dealer-01 Private agencies-0**	**00**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**10**	**12**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**21**	**01**
p	Whether herbicide container is destroyed after use?	**04**	**18**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**08**	**14**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**10**	**12**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -00 <30% - 22**	**00**
t	Whether weeds provide shelter to insect, pest?	**22**	**00**
u	Do you think weed's presence deteriorates the seed quality?	**22**	**00**

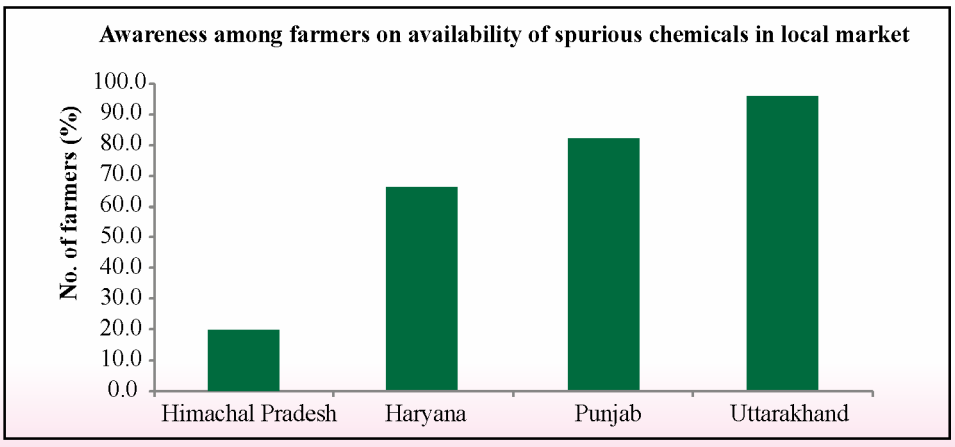
- In **Punjab**, 81.8% respondents realized that the use of integrated methods (herbicide/mechanical weeding/hand weeding) give better results and 72.7% respondents felt that the method was not time consuming and costly affairs than other methods.
- No ITK was being used in the state for weed management.
- About 86.4% of respondents opined that the chemical method for controlling weeds was economical and time saving but 13.6% preferred mechanical method.
- In the state, 36.4 and 22.7% respondents were aware about appropriate time of application of pre-emergence and post-emergence herbicide, respectively.
- 27.3% respondents felt the necessity of sufficient soil moisture during application of herbicides and all respondents avoided herbicide spray during high speed wind and cloudy weather.
- None of the respondents were using the precautionary measure during spraying and 81.8% heard about spurious/adulterated chemical and their availability in local market.
- 95.5% respondents were using separate nozzle like flat fan for spraying herbicides, but only 18.2% of respondents used to destroy the container after spraying.
- 36.4% respondents performed mixing of herbicides with other pesticides.

Uttarakhand

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**20**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**00**	**20**
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	**18**	**02**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**18**	**02**
e	Is there any ITK prevailing in your area for weed management?	**00**	**20**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-20 Manual-0 Mechanical-0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**20**	**00**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**20**	**00**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**20**	**00**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**17**	**03**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**11**	**09**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**19**	**01**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR/SAU-20 Progressive farmer-0 Local dealer-0 Private agencies-0**	**00**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**20**	**00**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**20**	**00**
p	Whether herbicide container is destroyed after use?	**15**	**05**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**00**	**20**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**01**	**19**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -00 <30% - 20**	**00**
t	Whether weeds provide shelter to insect, pest?	**16**	**04**
u	Do you think weed's presence deteriorates the seed quality?	**20**	**00**

- In **Uttarakhand,** 90% respondents felt that the use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results and the method is not time consuming and costly than others.
- No ITK was used in the state for weed management.
- 85% of respondents avoided herbicide spray during high speed wind & cloudy weather.
- About 55% respondents were using the precautionary measure during spraying and 95% have idea about spurious /adulterated chemical available in their locality.
- None of the respondent mixed herbicide with other pesticides.
- 80% respondents opined that weeds provide shelter to insect and pest and its presence deteriorates the seed quality.
- Overall results showed the moderate level of awareness and adoption level of





South Zone

Telangana

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**10**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**05**	**05**
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	**10**	**00**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**03**	**07**
e	Is there any ITK prevailing in your area for weed management?	**03**	**07**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-09 Manual-01 Mechanical-0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**00**	**10**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**03**	**07**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**02**	**08**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**00**	**10**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**03**	**07**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**09**	**01**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR/SAU-07 Progressive farmer-0 Local dealer-0 Private agencies-0**	**00**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**05**	**05**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**00**	**10**
p	Whether herbicide container is destroyed after use?	**00**	**10**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**08**	**02**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/ friend farmer/any other)	**07**	**03**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -00 <30% - 09**	**01**
t	Whether weeds provide shelter to insect, pest?	**00**	**10**
u	Do you think weed's presence deteriorates the seed quality?	**09**	**01**

- In **Telangana,** some of the respondents (30%) realized the integrated weed management method a time consuming & costly than others.
- According to 30% respondents, there was ITK for weed management.
- The respondents of the state didn't have any knowledge about appropriate time of application of pre-emergence herbicides and only 30% respondents were aware about appropriate time of application of post-emergence herbicide.
- 20% respondents of the state have knowledge about the necessity of having sufficient moisture in soil during application of herbicides and no one avoided herbicide spray during high speed wind & cloudy weather.
- Only 30% respondents were using the precautionary measure during spraying and 90% have heard about spurious/adulterated chemical and their availability in local market.
- About 50% respondents were performing the task of spraying themselves but no one had used separate nozzle like flat fan for spraying herbicides and also not destroyed the herbicide container after spraying.
- 80% of respondents used to spray herbicide with other pesticides in mixtures.

Karnataka

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**20**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**01**	**19**
c	Whether use of integrated weed management methods (herbicide/ mechanical weeding/hand weeding) give better results?	**20**	**00**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**02**	**18**
e	Is there any ITK prevailing in your area for weed management?	**00**	**20**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-20 Manual-0 Mechanical-0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**20**	**00**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**20**	**00**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**20**	**00**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**20**	**00**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**00**	**20**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**00**	**20**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR-20 Progressive farmer-0 Local dealer-0 Private agencies-0**	**00**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**20**	**00**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**19**	**01**
p	Whether herbicide container is destroyed after use?	**19**	**01**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**00**	**20**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**00**	**20**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -00 <30% - 20**	**00**
t	Whether weeds provide shelter to insect, pest?	**20**	**00**
u	Do you think weed's presence deteriorates the seed quality?	**03**	**17**

- None of the respondents in **Karnataka** were using precautionary measures during spraying and none heard about spurious/adulterated chemical and their availability in local market.
- All the respondents were using nozzle like flat fan for spraying herbicides and 95% used to destroy herbicide container after spraying.
- In the state, respondents used to mix herbicide with other pesticides.
- Only 15% respondents opined that the weeds can deteriorate the seed quality.

Kerala

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**12**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**00**	**12**
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	**12**	**00**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**12**	**00**
e	Is there any ITK prevailing in your area for weed management?	**12**	**00**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-12 Manual-0 Mechanical-0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**12**	**00**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**12**	**00**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**12**	**00**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**12**	**00**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**10**	**02**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**00**	**12**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR/SAU-12 Progressive farmer-0 Local dealer-0 Private agencies-0**	**00**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**01**	**11**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**12**	**00**
p	Whether herbicide container is destroyed after use?	**12**	**00**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**00**	**12**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**00**	**12**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -00 <30% - 20**	**00**
t	Whether weeds provide shelter to insect, pest?	**12**	**00**
u	Do you think weed's presence deteriorates the seed quality?	**12**	**00**

- In **Kerala**, 83.3% respondents were using the precautionary measure during spraying and none of the respondent had heard about spurious / adulterated chemical available in their locality.
- Only 8.3% respondents were doing spraying by themselves. All the respondents were using separate nozzle like flat fan for spraying herbicides.
- Results showed the high level of adoption and awareness among farmers.

Puducherry

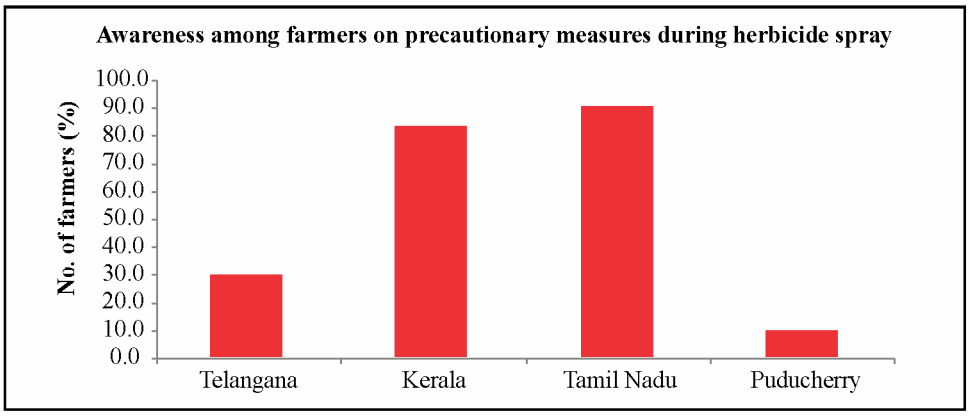
Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**10**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**08**	**02**
c	Whether use of integrated weed management methods (herbicide /mechanical weeding/hand weeding) give better results?	**07**	**03**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**10**	**00**
e	Is there any ITK prevailing in your area for weed management?	**10**	**00**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-07 Manual-03 Mechanical-0**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**07**	**03**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**07**	**03**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**08**	**02**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**08**	**02**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**01**	**09**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**10**	**00**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR-19 Progressive farmer-0 Local dealer-0 Private agencies-0**	**01**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**03**	**07**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**01**	**09**
p	Whether herbicide container is destroyed after use?	**00**	**10**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**00**	**10**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**01**	**09**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -00 <30% - 10**	**00**
t	Whether weeds provide shelter to insect, pest?	**10**	**00**
u	Do you think weed's presence deteriorates the seed quality?	**10**	**00**

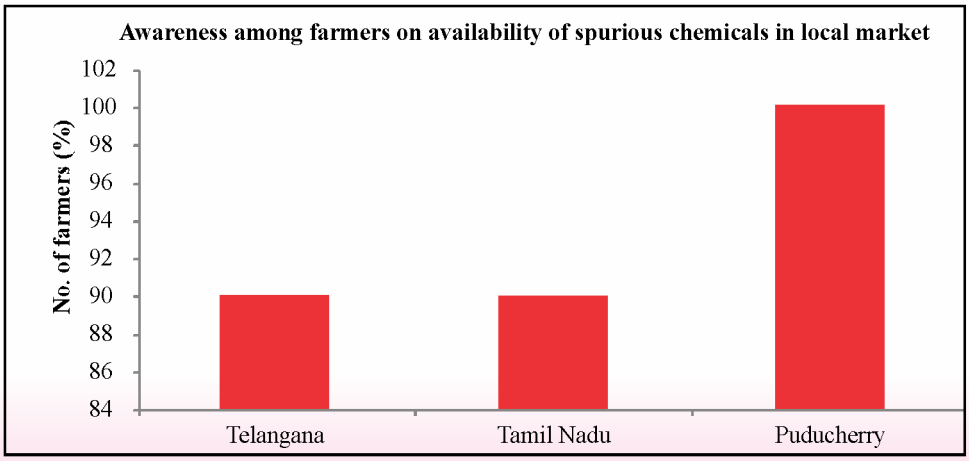
- In **Puducherry**, 70% respondents of the state felt that use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results and they were also agree that the method was not time consuming and costly than other methods.
- 70% of respondents opined that the chemical method for controlling weeds is economical and time saving and only 30% preferred hand weeding.
- In the state, 70% respondents were aware about appropriate time of application of pre-emergence and post-emergence herbicide.
- 80% respondents have knowledge about the necessity of sufficient moisture in soil during application of herbicides and avoided herbicide spray during high speed wind & cloudy weather.
- Only 10% respondents used the precautionary measures during spraying and all were aware about spurious/adulterated chemical and their availability in your local market.
- Only 30% respondents used to spray the herbicide themselves.
- 10% respondents were using separate nozzle like flat fan for spraying herbicides and the container was not destroyed by them after spraying.

Tamil Nadu

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	**10**	**00**
b	Whether mechanical weeding/hand weeding is better than herbicides?	**03**	**07**
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results.	**05**	**05**
d	Whether use of integrated weed management methods is time consuming and costly affairs?	**01**	**09**
e	Is there any ITK prevailing in your area for weed management?	**00**	**10**
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-10 Manual-01 Mechanical-01**	**00**
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	**10**	**00**
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	**09**	**01**
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	**10**	**00**
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	**09**	**01**
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	**09**	**01**
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	**09**	**01**
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR/AO/KVK-08 Progressive farmer-0 Local dealer-0 Private agencies-0**	**02**
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	**02**	**08**
o	Are you using separate nozzle like flat fan for spraying herbicides?	**10**	**00**
p	Whether herbicide container is destroyed after use?	**10**	**00**
q	Whether herbicide is sprayed with (by mixing) other pesticides?	**00**	**10**
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	**00**	**10**
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -00 <30% - 08**	**02**
t	Whether weeds provide shelter to insect, pest?	**08**	**02**
u	Do you think weed's presence deteriorates the seed quality?	**07**	**03**

- In **Tamil Nadu,** 50% respondents opined that use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results though it was time consuming and costly affairs.
- No ITK was being used in the state for weed management.
- All the respondents felt the chemical method is economical and time saving for controlling weeds than other two methods.
- 90% respondents were using the precautionary measure during spraying and heard about spurious /adulterated chemical available in their localities.
- Only 20% respondents used to perform spraying themselves. All the respondents were using separate nozzle like flat fan for spraying herbicides and destroyed the herbicide container after spraying.
- None of the respondents used to mix herbicide with other pesticides.
- According to 80% of the respondents, the yield loss occurred due to weeds was less than 30% and it also provides shelter to insect and pest.
- Besides, 70% respondents opined that weeds can deteriorate the seed quality.





West Zone

Gujarat

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	19	01
b	Whether mechanical weeding/hand weeding is better than herbicides?	04	16
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	20	00
d	Whether use of integrated weed management methods is time consuming and costly affairs?	03	17
e	Is there any ITK prevailing in your area for weed management?	00	20
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	Chemical-20 Manual-0 Mechanical-0	00
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	19	01
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	19	01
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	20	00
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	12	08
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	14	06
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	07	13
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	DWR/SAU- 19 Progressive farmer-0 Local dealer-0 Private agencies-0	01
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	07	13
o	Are you using separate nozzle like flat fan for spraying herbicides?	17	03
p	Whether herbicide container is destroyed after use?	11	09
q	Whether herbicide is sprayed with (by mixing) other pesticides?	00	20
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	00	20
s	How much normally yield loss occurred due to weeds? >10%, 10-20%, 20-30% &<30%?	>30% -00 <30% - 20	00
t	Whether weeds provide shelter to insect, pest?	18	02
u	Do you think weed's presence deteriorates the seed quality?	19	01

- In **Gujarat,** 95% respondents opined that use of herbicide is better and easy to manage weeds. Only 20% of them felt that the mechanical weeding/hand weeding was better than herbicides.
- All respondents of the state realized that use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results and only 15% felt that this method is time consuming and costlier than others.
- In the state, 95% respondents were aware about the appropriate time of application of pre-emergence and post-emergence herbicide.
- 70% of the respondents were using precautionary measures during spray and only 35% heard about spurious/adulterated chemical and their availability in local market.
- 35% respondents used to spray pesticides / herbicides themselves and 85% were using separate nozzle like flat fan for spraying herbicides. About 55% used to destroy herbicide container after spraying.
- In the state, none of the respondents was mixing herbicide with other pesticides.
- According to all the respondents, the yield loss occurred due to weeds was less than 30 % and 90% respondent felt that it provides shelter to insect and pest.

Maharashtra

Sr. No.	Question	Answer	
		Yes	No
a	Whether herbicide application is better and easy?	11	00
b	Whether mechanical weeding/hand weeding is better than herbicides?	11	00
c	Whether use of integrated weed management methods (herbicide/mechanical weeding/hand weeding) give better results?	11	00
d	Whether use of integrated weed management methods is time consuming and costly affairs?	00	11
e	Is there any ITK prevailing in your area for weed management?	00	11
f	Which one is economical and time saving: Chemical/Mechanical/Manual methods?	**Chemical-11 Manual-0 Mechanical-0**	00
g	Do you know about appropriate time of application of pre-emergence herbicide? (eg. After 0-3 days of sowing but before germination of seed)	11	00
h	Do you know about appropriate time of application of post-emergence herbicide? (eg. at 2-4 leaves stage of weed & when crop is 20-30 DAS)	11	00
i	Is it necessary to have sufficient moisture in soil during application of herbicides?	11	00
j	Whether you have avoided herbicide spray during high speed wind & cloudy weather?	11	00
k	Any precautionary measure used during spraying (Mask/cloth/gloves):	11	00
l	Do you have any experience/ idea or have you ever heard about spurious /adulterated chemical and their availability in your local market?	00	11
m	Who gave advise for what chemical in which crop, what dose/time to be followed?	**DWR/Scientist-11 Progressive farmer-0 Local dealer-0 Private agencies-0**	00
n	Whether spraying is done by yourself? Yes/No If no, then before spraying, whether dose of herbicide is informed to labour.	11	00
o	Are you using separate nozzle like flat fan for spraying herbicides?	05	06
p	Whether herbicide container is destroyed after use?	04	07
q	Whether herbicide is sprayed with (by mixing) other pesticides?	00	11
r	If yes, source of recommendation (Please tick on appropriate one - Self decision/herbicide dealer/friend farmer/any other)	00	11
s	How much normally yield loss occurred due to weeds? **>10%, 10-20%, 20-30% &<30%?**	**>30% -00 <30% - 11**	00
t	Whether weeds provide shelter to insect, pest?	11	00
u	Do you think weed's presence deteriorates the seed quality?	11	00

- In **Maharashtra,** all the respondents used to spray pesticides / herbicides themselves. But only 45.5% respondents were using separate nozzle like flat fan for spraying herbicides and 36.4% used to destroy the herbicide container after spraying.
- It was found that, awareness level of weed management technologies among farmers was high.

8. Adoption level of chemical method of weed control

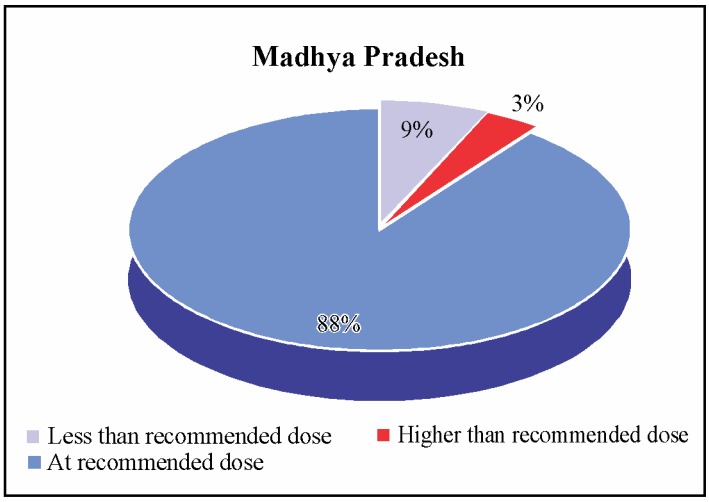
This section describes the awareness level and details of information related to the techniques used by the farmers for weed control in general and chemical control in particular. Information was collected on number of farmers used different doses of herbicide; time of application of herbicide; type of nozzle used for herbicide application; availability of labourers in their locality; quantity of water used in herbicide application; source of water for spraying and utilization of weeds by the respondent for different purposes.

8.1 Application rate of herbicide

Central Zone

Sr. No.	Particular	No. of farmers followed			
		MP	Bihar	Chhattisgarh	UP
1.	Less than recommended dose	8	0	1	0
2.	Higher than recommended dose	3	0	0	0
3.	At recommended dose	81	20	14	20
	Total	**92**	**20**	**22**	**20**

MP - Madhya Pradesh, UP - Uttar Pradesh



East Zone

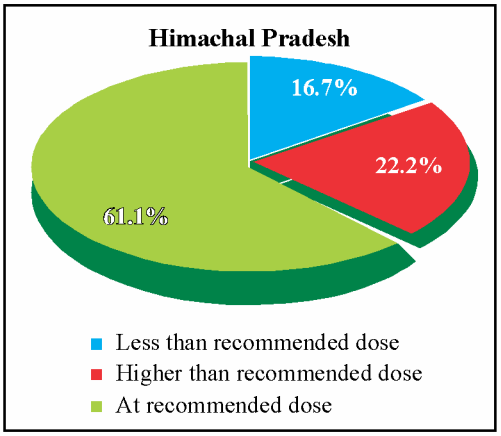
Sr. No.	Particular	No. of farmers followed			
		Odisha	Jharkhand	WB	Assam
1.	Less than recommended dose	0	0	0	0
2.	Higher than recommended dose	0	0	5	0
3.	At recommended dose	20	22	15	21
	Total	**20**	**22**	**20**	**21**

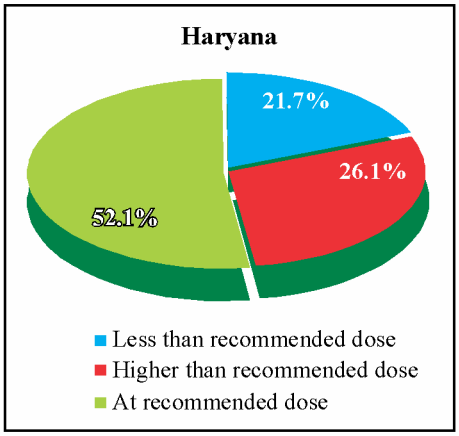
WB - West Bengal

North Zone

Sr. No.	Particular	No. of farmers followed			
		HP	Haryana	Punjab	Uttarakhand
1.	Less than recommended dose	**3**	**5**	**0**	**0**
2.	Higher than recommended dose	**4**	**6**	**7**	**1**
3.	At recommended dose	**11**	**12**	**15**	**19**
	Total	**18**	**23**	**22**	**20**

HP - Himachal Pradesh





South Zone

Sr. No.	Particular	No. of farmers followed				
		Telangana	Karnataka	Kerala	Puducherry	Tamil Nadu
1.	Less than recommended dose	0	0	0	1	1
2.	Higher than recommended dose	0	0	0	0	0
3.	At recommended dose	10	20	12	6	9
	Total	**10**	**20**	**12**	**7**	**10**

West Zone

Sr. No.	Particular	No. of farmers followed	
		Gujarat	Maharashtra
1.	Less than recommended dose	0	0
2.	Higher than recommended dose	0	0
3.	At recommended dose	10	11
	Total	**10**	**11**

8.2 Time of application of herbicide

Central Zone

Sr. No.	Particular	No. of farmers followed			
		MP	Bihar	Chhattisgarh	UP
1.	Application of herbicide at recommended time	80	20	14	20
2.	Application of herbicide after recommended time	12	0	6	0
3.	Application of herbicide before recommended time	0	0	2	0
	Total	**92**	**20**	**22**	**20**

MP - Madhya Pradesh, UP - Uttar Pradesh

East Zone

Sr. No.	Particular	No. of farmers followed			
		Odisha	Jharkhand	WB	Assam
1.	Application of herbicide at recommended time	20	21	20	21
2.	Application of herbicide after recommended time	0	0	0	0
3.	Application of herbicide before recommended time	0	0	0	0
	Total	**20**	**22**	**20**	**21**

WB - West Bengal

North Zone

Sr. No.	Particular	No. of farmers followed			
		HP	Haryana	Punjab	Uttarakhand
1.	Application of herbicide at recommended time	14	18	8	13
2.	Application of herbicide after recommended time	2	2	13	7
3.	Application of herbicide before recommended time	2	1	0	0
	Total	**18**	**23**	**22**	**20**

HP - Himachal Pradesh

South Zone

Sr. No.	Particular	No. of farmers followed				
		Telangana	Karnataka	Kerala	Puducherry	Tamil Nadu
1.	Application of herbicide at recommended time	10	20	12	5	8
2.	Application of herbicide after recommended time	0	0	0	2	1
3.	Application of herbicide before recommended time	0	0	0	0	0
	Total	**10**	**20**	**12**	**7**	**10**

West Zone

Sr. No.	Particular	No. of farmers followed	
		Gujarat	Maharashtra
1.	Application of herbicide at recommended time	15	11
2.	Application of herbicide after recommended time	4	0
3.	Application of herbicide before recommended time	1	0
	Total	**20**	**11**

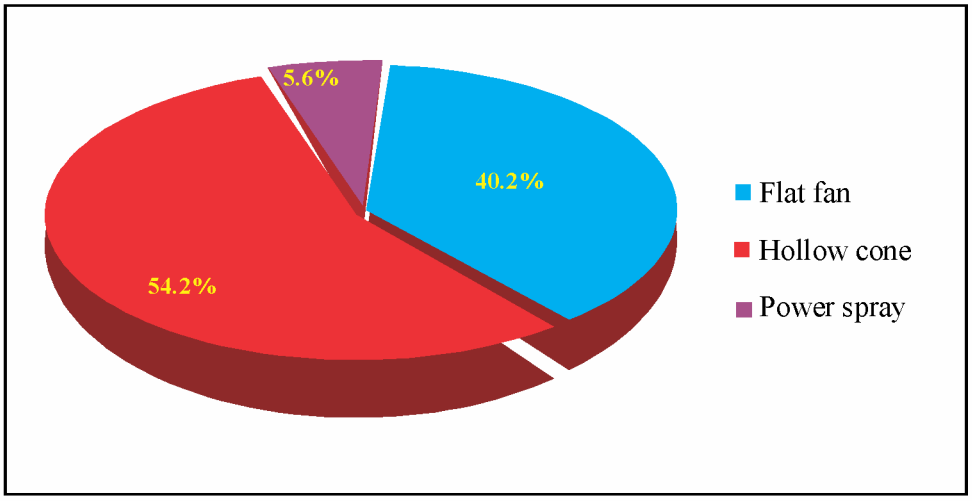
8.3 Type of nozzle used for herbicide application

Central Zone

Sr. No.	Particular	No. of farmers followed			
		MP	Bihar	Chhattisgarh	UP
1.	Flat fan	43	20	13	20
2.	Hollow cone	58	0	7	0
3.	Flood-jet	0	0	0	0
4.	Power spray	6	0	0	0
5.	Sand or urea mix	0	0	0	0

MP - Madhya Pradesh, UP - Uttar Pradesh

Madhya Pradesh

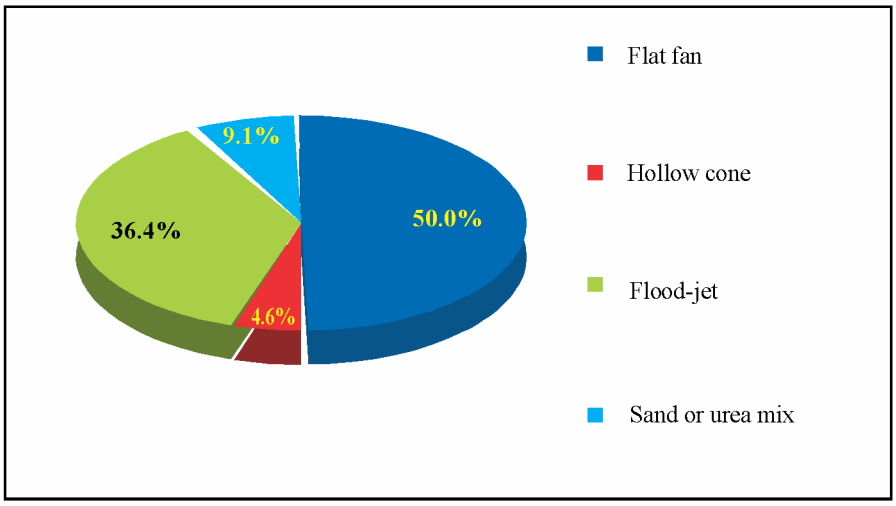


East Zone

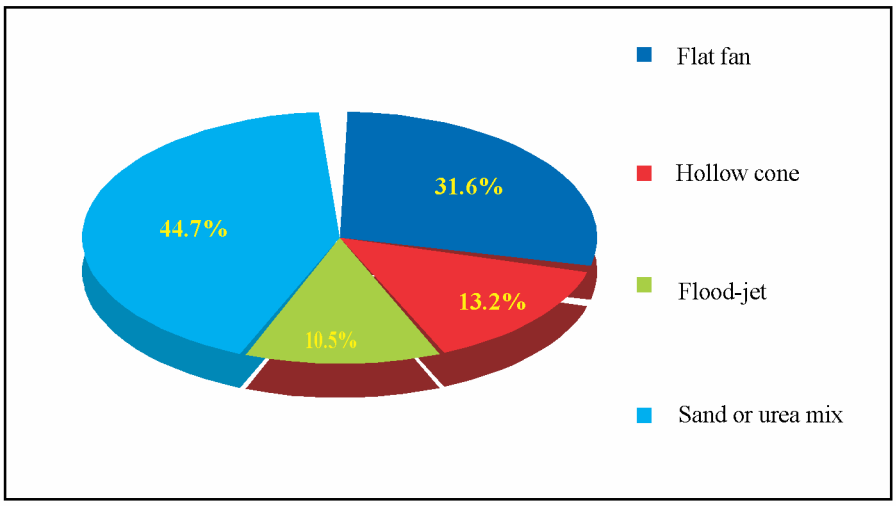
Sr. No.	Particular	No. of farmers followed			
		Odisha	Jharkhand	WB	Assam
1.	Flat fan	11	20	12	0
2.	Hollow cone	1	5	5	0
3.	Flood-jet	8	0	4	0
4.	Power spray	0	0	0	0
5.	Sand or urea mix	2	0	17	20

WB - West Bengal

Odisha



West Bengal

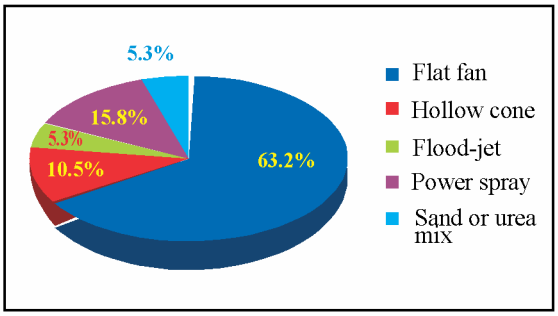


North Zone

Sr. No.	Particular	No. of farmers followed			
		HP	Haryana	Punjab	Uttarakhand
1.	Flat fan	12	14	13	20
2.	Hollow cone	2	5	1	1
3.	Flood-jet	1	7	4	9
4.	Power spray	3	4	8	0
5.	Sand or urea mix	1	3	0	0

HP - Himachal Pradesh

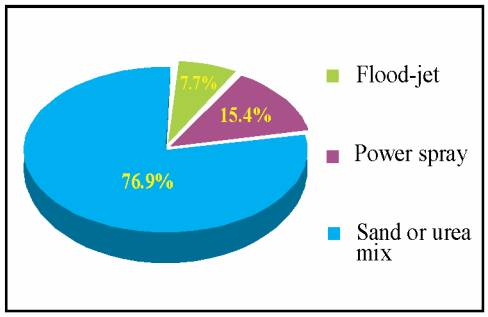
Himachal Pradesh



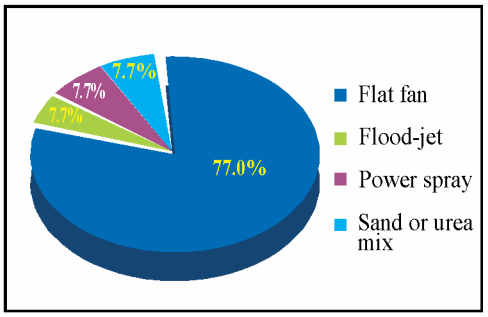
South Zone

Sr. No.	Particular	No. of farmers followed				
		Telangana	Karnataka	Kerala	Puducherry	Tamil Nadu
1.	Flat fan	0	20	0	1	10
2.	Hollow cone	0	0	1	0	0
3.	Flood-jet	1	0	11	1	1
4.	Power spray	2	0	0	0	1
5.	Sand or urea mix	10	0	0	5	1

Telangana



Tamil Nadu



West Zone

Sr. No.	Particular	No. of farmers followed	
		Gujarat	Maharashtra
1.	Flat fan	17	7
2.	Hollow cone	3	4
3.	Flood-jet	0	0
4.	Power spray	0	0
5.	Sand or urea mix	0	0

8.4 Availability of labourers

Central Zone

Sr. No.	Particular	No. of farmers followed			
		MP	Bihar	Chhattisgarh	UP
1.	Abundant	0	0	13	0
2.	Available to some extent	85	20	3	20
3.	Not available	7	0	0	0
4.	Not required due to family labour	0	0	0	0

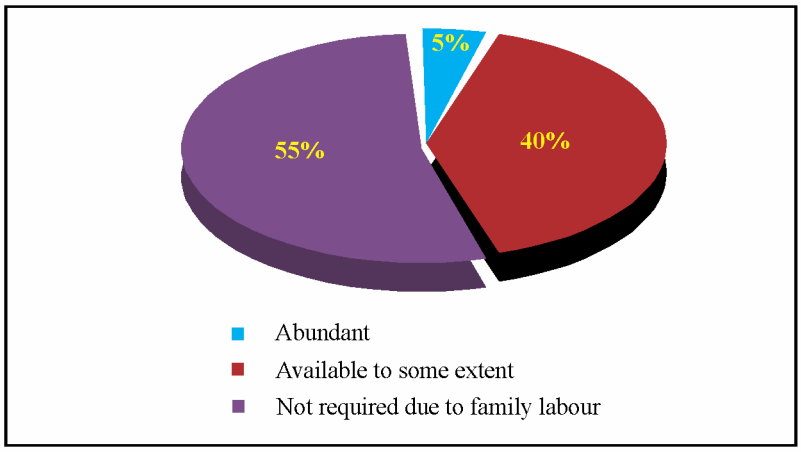
MP - Madhya Pradesh, UP - Uttar Pradesh

East Zone

Sr. No.	Particular	No. of farmers followed			
		Odisha	Jharkhand	WB	Assam
1.	Abundant	1	1	1	0
2.	Available to some extent	8	21	19	21
3.	Not available	0	1	0	0
4.	Not required due to family labour	11	0	0	0

WB - West Bengal

Odisha

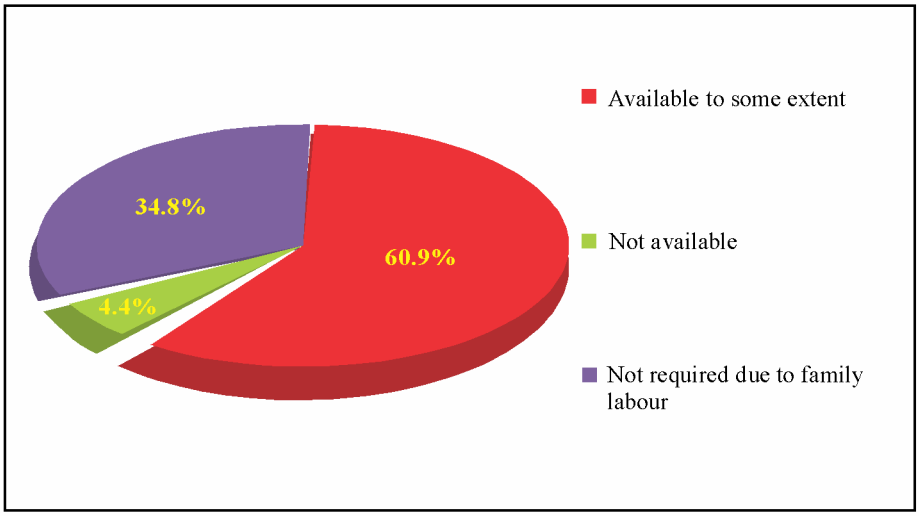


North Zone

Sr. No.	Particular	No. of farmers followed			
		HP	Haryana	Punjab	Uttarakhand
1.	Abundant	0	0	0	0
2.	Available to some extent	5	14	18	20
3.	Not available	6	1	4	0
4.	Not required due to family labour	9	8	0	0

HP - Himachal Pradesh

Haryana



South Zone

Sr. No.	Particular	No. of farmers followed				
		Telangana	Karnataka	Kerala	Puducherry	Tamil Nadu
1.	Abundant	0	0	0	0	0
2.	Available to some extent	7	20	12	5	5
3.	Not available	2	0	0	2	5
4.	Not required due to family labour	1	0	0	2	0

West Zone

Sr. No.	Particular	No. of farmers followed	
		Gujarat	Maharashtra
1.	Abundant	1	0
2.	Available to some extent	19	0
3.	Not available	0	0
4.	Not required due to family labour	0	11

8.5 Quantity of water used for spraying herbicide

Central Zone

Sr. No.	Particular	No. of farmers followed			
		MP	Bihar	Chhattisgarh	UP
1.	Less than recommended quantity	16	0	0	0
2.	Higher than recommended quantity	0	0	0	0
3.	At recommended quantity	75	20	19	20

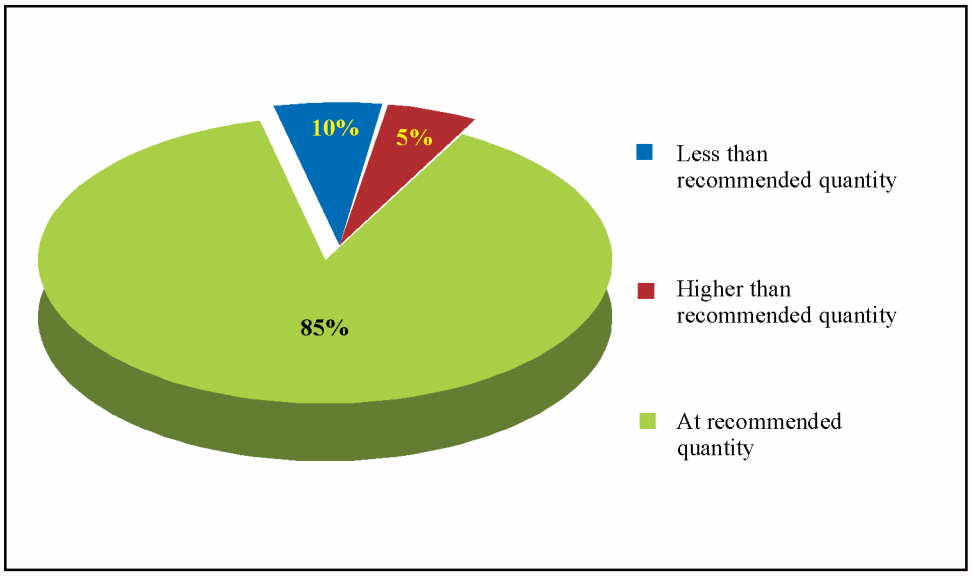
MP - Madhya Pradesh, UP - Uttar Pradesh

East Zone

Sr. No.	Particular	No. of farmers followed			
		Odisha	Jharkhand	WB	Assam
1.	Less than recommended quantity	2	1	0	0
2.	Higher than recommended quantity	1	0	0	0
3.	At recommended quantity	17	21	20	21

WB - West Bengal

Odisha

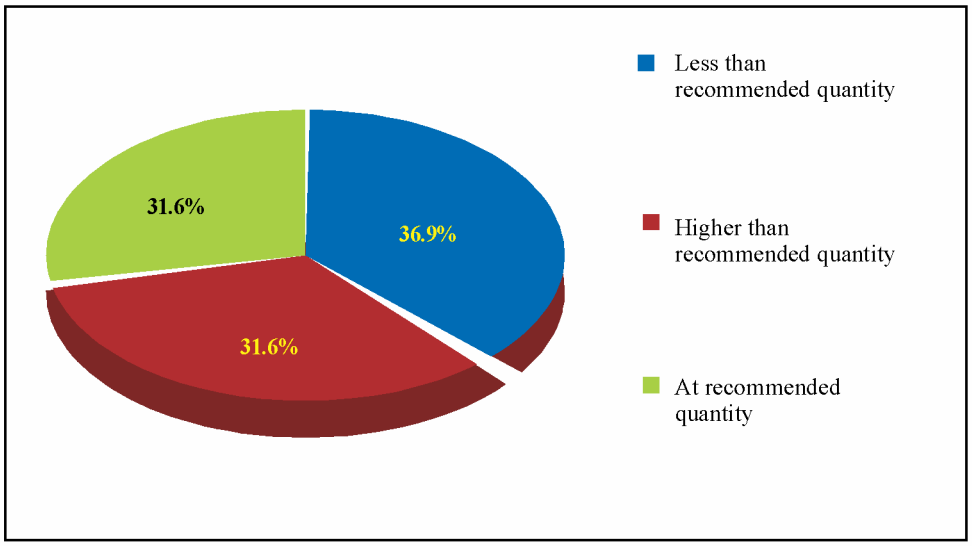


North Zone

Sr. No.	Particular	No. of farmers followed			
		HP	Haryana	Punjab	Uttarakhand
1.	Less than recommended quantity	7	9	15	0
2.	Higher than recommended quantity	6	1	0	2
3.	At recommended quantity	6	13	7	18

HP - Himachal Pradesh

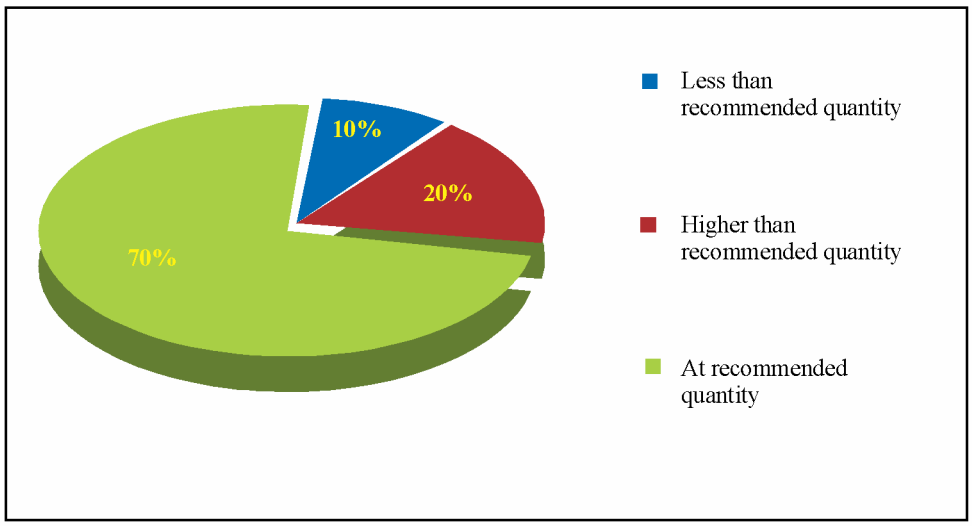
Himachal Pradesh



South Zone

Sr. No.	Particular	No. of farmers followed				
		Telangana	Karnataka	Kerala	Puducherry	Tamil Nadu
1.	Less than recommended quantity	6	0	12	2	1
2.	Higher than recommended quantity	0	0	0	0	2
3.	At recommended quantity	4	20	0	0	7

Tamil Nadu



West Zone

Sr. No.	Particular	No. of farmers followed	
		Gujarat	Maharashtra
1.	Less than recommended quantity	10	0
2.	Higher than recommended quantity	0	0
3.	At recommended quantity	10	11

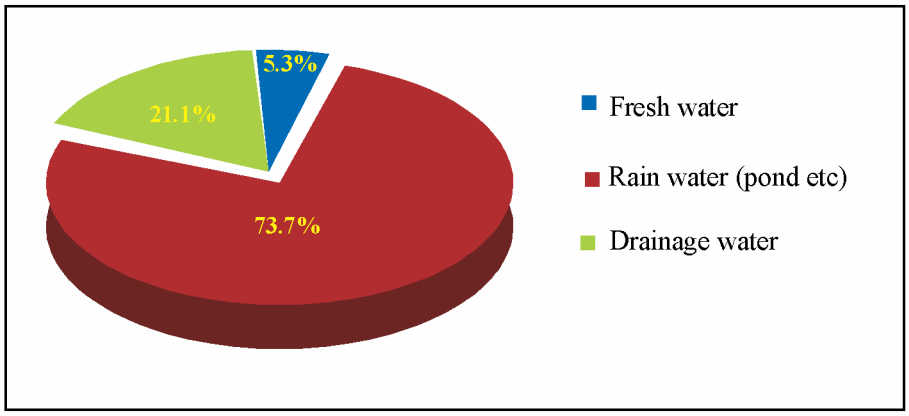
8.6 Source of water for herbicide spraying

Central Zone

Sr. No.	Particular	No. of farmers followed			
		MP	Bihar	Chhattisgarh	UP
1.	Fresh water	88	20	1	20
2.	Rain water (pond etc)	20	0	14	0
3.	Drainage water	3	0	4	0

MP - Madhya Pradesh, UP - Uttar Pradesh

Chhattisgarh



East Zone

Sr. No.	Particular	No. of farmers followed			
		Odisha	Jharkhand	WB	Assam
1	Fresh water	16	1	0	0
2	Rain water (pond etc)	4	20	20	21
3	Drainage water	0	1	0	0

WB - West Bengal

North Zone

Sr. No.	Particular	No. of farmers followed			
		HP	Haryana	Punjab	Uttarakhand
1	Fresh water	15	19	17	18
2	Rain water (pond etc)	5	2	0	1
3	Drainage water	3	0	0	1

HP - Himachal Pradesh

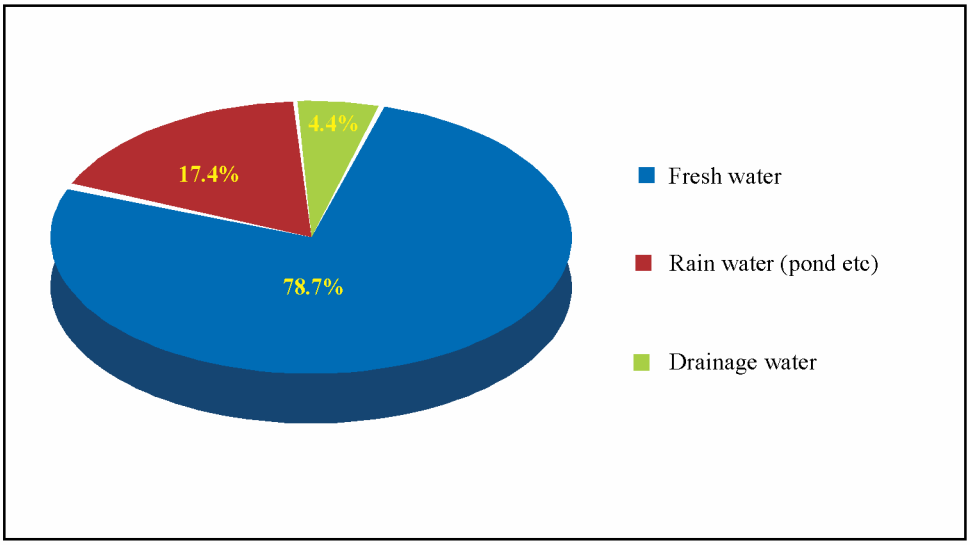
South Zone

Sr. No.	Particular	No. of farmers followed				
		Telangana	Karnataka	Kerala	Puducherry	Tamil Nadu
1	Fresh water	10	20	12	0	9
2	Rain water (pond etc)	0	0	0	2	1
3	Drainage water	0	0	0	0	0

West Zone

Sr. No.	Particular	No. of farmers followed	
		Gujarat	Maharashtra
1.	Fresh water	18	0
2.	Rain water (pond etc)	4	11
3.	Drainage water	1	0

Gujarat



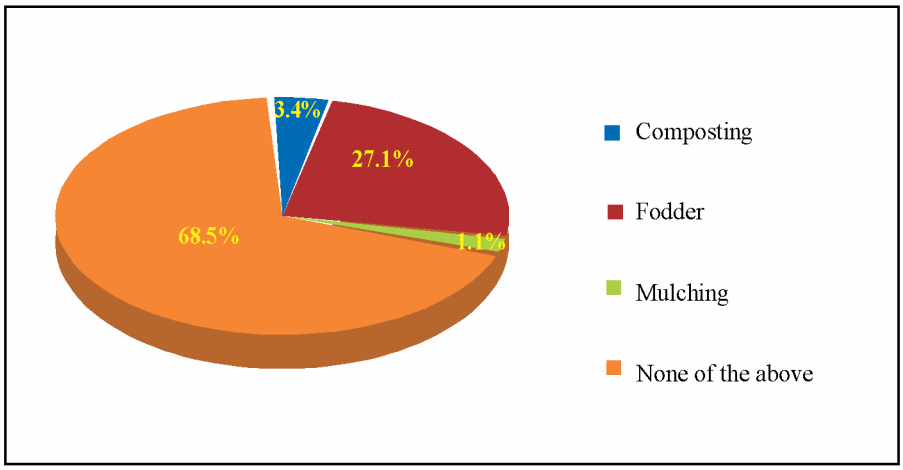
8.7 Utilization of weeds by farmers

Central Zone

Sr. No.	Particular	No. of farmers followed			
		MP	Bihar	Chhattisgarh	UP
1.	Composting	3	0	0	0
2.	Fodder	24	20	0	20
3.	Mulching	1	0	0	0
4.	Medicinal purpose	0	0	0	0
5.	All purposes	0	0	0	0
6.	None of the above	61	0	15	0

MP - Madhya Pradesh, UP - Uttar Pradesh

Madhya Pradesh

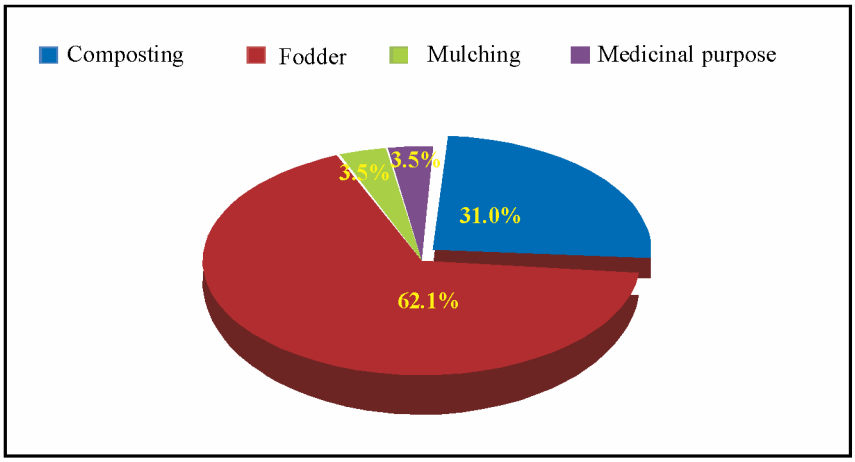


East Zone

Sr. No.	Particular	No. of farmers followed			
		Odisha	Jharkhand	WB	Assam
1.	Composting	9	20	2	0
2.	Fodder	18	22	18	0
3.	Mulching	1	0	0	0
4.	Medicinal purpose	1	17	0	0
5.	All purposes	0	0	0	21
6.	None of the above	0	0	2	0

WB - West Bengal

Odisha



North Zone

Sr. No.	Particular	No. of farmers followed			
		HP	Haryana	Punjab	Uttarakhand
1.	Composting	1	0	0	14
2.	Fodder	16	7	0	1
3.	Mulching	0	0	0	0
4.	Medicinal purpose	0	0	0	0
5.	All purposes	4	0	0	0
6.	None of the above	1	11	5	4

HP - Himachal Pradesh

South Zone

Sr. No.	Particular	No. of farmers followed				
		Telangana	Karnataka	Kerala	Puducherry	Tamil Nadu
1.	Composting	0	1	2	0	0
2.	Fodder	0	0	0	1	8
3.	Mulching	0	0	0	0	0
4.	Medicinal purpose	0	1	0	0	0
5.	All purposes	0	0	0	0	0
6.	None of the above	7	19	10	6	1

West Zone

Sr. No.	Particular	No. of farmers followed	
		Gujarat	Maharashtra
1.	Composting	3	0
2.	Fodder	13	11
3.	Mulching	0	0
4.	Medicinal purpose	0	0
5.	All the purposes	0	0
6.	None of the above	6	0

9. Constraints in adoption of weed management technologies at farmer's level

This section provides the constraints/difficulties faced by the farmers in adoption of Improved Weed Management Technologies/ herbicides. These are: lack of awareness about IWM Technologies; lack of proper technical knowledge about herbicides; unavailability and high cost of herbicides; social fear about use of herbicides; less risk bearing capacity about new technology; fear about residual effect on next crops; supply of spurious/adulterated material; herbicide spray is very tedious and complex job; absence of any recovery mechanism to recouped the crop, if anything happened wrong due to use of herbicide; lack of information on recommended dose of herbicides and time of herbicide application; moisture unavailability at the time of application, lack of information on method of herbicide application; lack of knowledge about use of sprayer and appropriate nozzle; quantity of water used for spray; precautions during spray, herbicide resistance weeds; lack of technical knowledge for preparing of mixture of two herbicides for effective broad spectrum weed control and time/labour saving.

Central Zone

Sr. No.	Problem	No. of respondents			
		Madhya Pradesh	Bihar	Chhattisgarh	Uttar Pradesh
1.	Lack of awareness about IWM technologies	80	0	18(II)	20
2.	Lack of proper technical knowledge about herbicides	82(III)	0	19(I)	20
3.	Unavailability of herbicides	27	20	19(I)	20
4.	High cost of herbicides	17	20	19(I)	20
5.	Social fear about use of herbicides	13	0	0	20
6.	Less risk bearing capacity about new technology	23	0	19(I)	20
7.	Fear about residual effect on next crops	15	0	1	0
8.	Supply of spurious/adulterated material	18	0	1	20
9.	Spraying of herbicides is very tedious and complex job	18	0	1	20
10.	If anything happened wrong due to use of herbicide, there is no recovery mechanism to recouped the crop	78	20	10	20
11.	Lack of information on recommended dose of herbicides	27	0	2	20
12.	Lack of information on time of herbicide application	29	0	1	20
13.	Moisture unavailability at the time of application	64	0	0	20
14.	Lack of information on method of herbicide application	84(I)	0	0	20

Table continue...

15.	Lack of knowledge about use of sprayer	**83(II)**	**0**	**0**	**20**
16.	Lack of knowledge about use of appropriate nozzle	**61**	**0**	**0**	**20**
17.	Lack of knowledge about quantity of water used for spray	**20**	**0**	**0**	**20**
18.	Lack of knowledge about the precautions during spray	**76**	**0**	**0**	**20**
19.	Resistance of weeds to herbicides, if any	**40**	**0**	**1**	**0**
20.	Lack of technical knowledge for preparing of mixture of two herbicides for effective broad spectrum weed control and time/labour saving?	**56**	**0**	**1**	**20**

- In **Madhya Pradesh**, respondents were mostly facing the problem of lack of information on method of herbicide application (91.3%) followed by lack of knowledge about use of sprayer (90.2%), lack of proper technical knowledge about herbicides (89.1%), lack of awareness about IWM technologies (86.95%) and lack of any recovery mechanism to recouped the crop after the wrong use of herbicides (84.78%) in adoption of IWM technologies.
- In **Bihar**, respondents were facing mainly three major constraints in non-adoption of herbicides *viz.* unavailability of herbicides, high cost of herbicides and lack of any recovery mechanism to recouped the crop after wrong use of herbicides.
- In **Chhattisgarh**, all respondents were facing problems viz. lack of proper technical knowledge about herbicides, unavailability of herbicides, high cost of herbicides, less risk bearing capacity about new technology followed by lack of awareness about IWM technologies (94.7%) and lack of any recovery mechanism to recouped the crop due after wrong use of herbicides (52.6%).
- In **Uttar Pradesh**, all respondents were facing the problems like lack of awareness about IWM technologies, lack of proper technical knowledge about herbicides, unavailability of herbicides, high cost of herbicides, social fear about use of herbicides, less risk bearing capacity about new technology, supply of spurious/adulterated material, spraying of herbicides is very tedious and complex job, lack of information on recommended dose of herbicides / time of herbicide application / moisture unavailability at the time of application / method of herbicide application / use of sprayer / use of appropriate nozzle / quantity of water used for spray / precautions during spray and lack of technical knowledge for preparation of mixture of two herbicides for effective broad spectrum weed control and time/labour saving.

East Zone

Sr. No.	Problem	No. of respondents			
		Odisha	Jharkhand	West Bengal	Assam
1.	Lack of awareness about IWM technologies	20	22(I)	7	21
2.	Lack of proper technical knowledge about herbicides	20	0	17(III)	21
3.	Unavailability of herbicides	20	0	6	21
4.	High cost of herbicides	20	0	0	0
5.	Social fear about use of herbicides	20	0	19(II)	0
6.	Less risk bearing capacity about new technology	20	21(II)	8	4
7.	Fear about residual effect on next crops	20	1	14	21
8.	Supply of spurious/adulterated material	20	0	13	0
9.	Spraying of herbicides is very tedious and complex job	8	1	4	0
10.	If anything happened wrong due to use of herbicide, there is no recovery mechanism to recouped the crop	20	0	20(I)	21
11.	Lack of information on recommended dose of herbicides	20	0	14	21
12.	Lack of information on time of herbicide application	20	0	13	21
13.	Moisture unavailability at the time of application	11	9	15	0
14.	Lack of information on method of herbicide application	11	0	13	21
15.	Lack of knowledge about use of sprayer	17	1	7	0
16.	Lack of knowledge about use of appropriate nozzle	18	17	10	0
17.	Lack of knowledge about quantity of water used for spray	19	20(III)	3	0
18.	Lack of knowledge about the precautions during spray	19	20(III)	17(III)	0
19.	Resistance of weeds to herbicides, if any	0	3	1	0
20.	Lack of technical knowledge for preparing of mixture of two herbicides for effective broad spectrum weed control and time/labour saving?	19	19	20(I)	20

- In **Odisha**, the respondents were mostly facing the problem of lack of awareness about IWM technologies, lack of proper technical knowledge about herbicides, unavailability of herbicides, high cost of herbicides, social fear about use of herbicides, less risk bearing capacity about new technology, fear about residual effect on next crops, supply of spurious/adulterated material, lack of any recovery mechanism after the wrong use of herbicides, lack of information on recommended dose of herbicides and lack of information on time of herbicide application.
- In **Jharkhand**, all respondents were facing problem of lack of awareness about IWM technologies. Further, 95.5% respondents had less risk bearing capacity about new technology and 90.9% respondents were having lack of knowledge about quantity of water used for spray and lack of knowledge about the precautions during spray.
- In **West Bengal**, all respondents faced the problem of lack of any recovery mechanism to recover the crop after wrong use of herbicides and lack of technical knowledge for preparing the mixture of two herbicides for effective broad-spectrum weed control as two main reasons for non-adoption of herbicides at farmers' level. Besides these, 95% of respondents have social fear about use of herbicides and 85% did not have proper technical knowledge about herbicides.
- In **Assam**, all respondents were facing the problem viz. lack of awareness about IWM technologies, lack of proper technical knowledge about herbicides, unavailability of herbicides, fear about residual effect on next crops, lack of any recovery mechanism to recouped crop after wrong use of herbicides, lack of information on recommended dose of herbicides / time of herbicide application and lack of information on method of herbicide application as the main reasons for non-adoption of herbicides /IWM technologies.

North Zone

Sr. No.	Problem	No. of respondents			
		Himachal Pradesh	Haryana	Punjab	Uttarakhand
1.	Lack of awareness about IWM technologies	19(I)	6	14	20
2.	Lack of proper technical knowledge about herbicides	17(III)	7	22(I)	20
3.	Unavailability of herbicides	18(II)	2	9	20
4.	High cost of herbicides	19	9(II)	22(I)	20
5.	Social fear about use of herbicides	10	0	8	20
6.	Less risk bearing capacity about new technology	17(III)	8(III)	12	20
7.	Fear about residual effect on next crops	6	2	11	0
8.	Supply of spurious/adulterated material	15	12(I)	17	20
9.	Spraying of herbicides is very tedious and complex job	10	2	8	20
10.	If anything happened wrong due to use of herbicide, there is no recovery mechanism to recouped the crop	18(II)	8(III)	13	20
11.	Lack of information on recommended dose of herbicides	10	1	7	20
12.	Lack of information on time of herbicide application	9	3	11	20
13.	Moisture unavailability at the time of application	9	4	18(III)	20
14.	Lack of information on method of herbicide application	10	3	12	20
15.	Lack of knowledge about use of sprayer	10	5	15	20
16.	Lack of knowledge about use of appropriate nozzle	19(I)	8(III)	16	20
17.	Lack of knowledge about quantity of water used for spray	11	5	16	20
18.	Lack of knowledge about the precautions during spray	8	9(II)	19(II)	20
19.	Resistance of weeds to herbicides, if any	6	5	22(I)	0
20.	Lack of technical knowledge for preparing of mixture of two herbicides for effective broad spectrum weed control and time/labour saving?	19(I)	8(III)	22(I)	20

- In **Himachal Pradesh**, respondents mentioned many reasons for non-adoption of IWM technologies viz. lack of awareness about IWM technologies, high cost of herbicides, lack of knowledge about use of appropriate nozzle and lack of technical knowledge for preparing the mixture of two herbicides for effective broad-spectrum weed control. About 90% of the respondents also felt that lack of recovery mechanism to recouped the crop after wrong use of herbicides and unavailability of herbicides are the major problems. Whereas, 85% felt that lack of proper technical knowledge about herbicides and less risk bearing capacity about new technology are also other reasons responsible for non adoption.
- In **Haryana**, 52.2% respondents felt that supply of spurious/adulterated material is the main reason of non-adoption. Whereas, 39% realized that lack of knowledge about the precautions during spray and high cost of herbicides and 34.8% felt the less risk bearing capacity about new technology and no recovery mechanism to recouped the crop after wrong use of herbicides, lack of knowledge about use of appropriate nozzle and lack of technical knowledge for preparing the mixture of two herbicides for effective broad-spectrum weed control are the main reasons among all.
- In **Punjab**, reasons for non-adoption of IWM technologies are different than reasons in other states. These are: lack of proper technical knowledge about herbicides, high cost of herbicides, resistance of weeds to herbicides and lack of technical knowledge for preparing the mixture of two herbicides for effective broad-spectrum weed control. Other than these, 86.4% respondents facing the problem of lack of knowledge about the precautions during spray and 81.8% facing the problem of moisture unavailability at the time of application.
- In **Uttarakhand**, adoption rate of IWM technologies are very low. Except two problems *i.e.* fear about residual effect on next crops and resistance of weeds to herbicides, all other problems were faced by farmers.

South Zone

Sr. No.	Problem	No. of respondents				
		Telangana	Karnataka	Kerala	Puducherry	Tamil Nadu
1.	Lack of awareness about IWM technologies	8(III)	1	0	4	7(III)
2.	Lack of proper technical knowledge about herbicides	10(I)	2	0	5	7(III)
3.	Unavailability of herbicides	3	3	0	1	3
4.	High cost of herbicides	4	18(I)	0	3	6
5.	Social fear about use of herbicides	7	4	0	6	8(II)
6.	Less risk bearing capacity about new technology	7	3	12	6	3
7.	Fear about residual effect on next crops	0	4	12	8(II)	6
8.	Supply of spurious/adulterated material	5	4	0	0	9(I)
9.	Spraying of herbicides is very tedious and complex job	9(II)	0	0	0	0
10.	If anything happened wrong due to use of herbicide, there is no recovery mechanism to recouped the crop	7	16(II)	0	7(III)	2
11.	Lack of information on recommended dose of herbicides	1	0	0	3	2
12.	Lack of information on time of herbicide application	1	0	0	3	0
13.	Moisture unavailability at the time of application	2	0	0	2	2
14.	Lack of information on method of herbicide application	2	0	0	3	1
15.	Lack of knowledge about use of sprayer	1	0	0	3	0
16.	Lack of knowledge about use of appropriate nozzle	9(II)	0	0	5	1
17.	Lack of knowledge about quantity of water used for spray	0	0	0	4	3
18.	Lack of knowledge about the precautions during spray	3	0	0	6	3
19.	Resistance of weeds to herbicides, if any	2	0	0	2	5
20.	Lack of technical knowledge for preparing of mixture of two herbicides for effective broad spectrum weed control and time/labour saving?	8(III)	14(III)	0	10(I)	6

- In **Telangana**, all respondents felt the lack of proper technical knowledge about herbicides as the major problem for non-adoption of herbicide. Other factors which are also responsible for non-adoption are; spraying of herbicides is very tedious and complex job (90%), lack of knowledge about use of appropriate nozzle (90%), lack of awareness about IWM technologies (80%) and lack of technical knowledge for preparing the mixture of two herbicides (80%).
- In **Karnataka,** respondents felt that the problems for non-adoption of IWM technologies are; high cost of herbicides (90%), lack of any recovery mechanism to recouped the crop after wrong use of herbicides (80%) and lack of technical knowledge for preparing the mixture of two herbicides for effective broad spectrum weed control (70%).
- In **Kerala**, adoption rate is very high and therefore only two reasons they could mention for non-adoption of herbicides, *i.e.* less risk bearing capacity about new technology and fear about residual effect of herbicides on next crops.
- In **Puducherry**, lack of technical knowledge for preparing the mixture of two herbicides is their major problem responsible for non-adoption of IWM technologies. Other than this, they have fear about residual effect on next crops (80%) and lack of recovery mechanism to recouped the crop after wrong use of herbicides (70%).
- In **Tamil Nadu**, 90% respondents felt that supply of spurious/adulterated material is the main reason for non-adoption of IWM technologies. Whereas, social fear about use of herbicides (80%), lack of awareness about IWM technologies (70%) and lack of proper technical knowledge about herbicides (70%) are among the other reasons.

West Zone

Sr. No.	Problem	No. of respndents	
		Gujarat	Maharashtra
1.	Lack of awareness about IWM technologies	5	11
2.	Lack of proper technical knowledge about herbicides	5	11
3.	Unavailability of herbicides	1	11
4.	High cost of herbicides	6	11
5.	Social fear about use of herbicides	9	0
6.	Less risk bearing capacity about new technology	9	2
7.	Fear about residual effect on next crops	15(II)	0
8.	Supply of spurious/adulterated material	9	0
9.	Spraying of herbicides is very tedious and complex job	7	0
10.	If anything happened wrong due to use of herbicide, there is no recovery mechanism to recouped the crop	18(I)	0
11.	Lack of information on recommended dose of herbicides	3	11
12.	Lack of information on time of herbicide application	3	11
13.	Moisture unavailability at the time of application	5	10
14.	Lack of information on method of herbicide application	2	10
15.	Lack of knowledge about use of sprayer	5	0
16.	Lack of knowledge about use of appropriate nozzle	5	11
17.	Lack of knowledge about quantity of water used for spray	7	11
18.	Lack of knowledge about the precautions during spray	12(III)	11
19.	Resistance of weeds to herbicides, if any	1	1
20.	Lack of technical knowledge for preparing of mixture of two herbicides for effective broad spectrum weed control and time/labour saving?	18(I)	11

- In **Gujarat**, 90% respondents perceived the lack of technical knowledge for preparing the mixture of two herbicides and lack of recovery mechanism to recouped the crop after wrong use of herbicides as the main reasons, for non-adoption of herbicides. At the same time, other factors like fear about the residual effect on next crops (75%) and lack of knowledge about the precautions during spray (60%) are also responsible for non-adoption of new technologies.
- In **Maharashtra**, there were many problems which were equally responsible for the non-adoption of improved technologies. These are lack of awareness about IWM technologies, lack of proper technical knowledge about herbicides, unavailability and high cost of herbicides, lack of information on recommended dose of herbicides/ time of herbicide application/ use of appropriate nozzle/ quantity of water used for spray/ precautions during spray and lack of technical knowledge for preparing the mixture of two herbicides for effective broad-spectrum weed control and time/labour saving.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