Methodology and Verification Protocol for DLI #4: Adoption of practices for efficient water use

Background

DLI# 4 is the second of the two indicators to incentivize the implementation of groundwater management measures included in the WSPs. This DLI incentivizes demand side measures that reduce water consumption, including the introduction of efficient micro-irrigation systems, a shift in cropping patterns away from water-intensive crops and feeder separation. The disbursement will be based on the increase in area (in hectares) at Gram Panchayat (GP) Level or the increase in number of blocks (in case of feeder separation) benefiting from these measures.

Framework for verification protocol

The verification protocol of DLI#4 comprises of 3 steps;

I. Baseline data fixation
II. Finalization of Template for Claim of Incentive
III. Verification methodology

I. Baseline Data Fixation

The broad framework for fixation of DLI#4 baseline data , indicators & sub indicators for claiming incentives against year on year increase under DLI#4 has been developed based on the Atal Bhujal Yojana Program Guidelines, Ver- 1.1 of the DoWR, Ministry of Jal Shakti and Project Appraisal Document (PAD) of the World Bank.

The baseline for DLI#4 shall be fixed for the first year i.e., 2020-21, the format for data submission by the states for base line data fixation is given in ***Annexure I*.** The baseline data will remain constant & will incorporate GP wise information on following sub indicators:

a) Net area (in hectares) under efficient irrigation system
b) Area (in hectares) under high & low water consuming crops and the difference between both
c) Net area (in hectares) under other water saving methods
d) Adoption of electricity feeder separation in the block

Data Validation / Checklist for baseline data of DLI#4

It is pertinent to mention that, the fixation of baseline data is a critical step under DLI#4 to assess the progress made under Atal Bhujal Yojana in Atal Jal Gram Panchayats. It is essential to take appropriate care of data consistency and hence a data validation / checklist have been prepared which should be strictly complied before submitting the data for fixation of base line. The checklist is as below:

- The surface area under different crops should be equal to the gross cropped area of the GP
- The gross irrigated area should be less than or equal to the gross cropped area of the GP
- The area under micro irrigation should always be less than the gross irrigated area
- To standardize the crop nomenclature across the states, a glossary of Hindi and English names of crops have been prepared and attached as ***Annexure II****, this* must be used.
- Information on the source of data is mandatory for baseline data
- All the information/data shared with NPMU should be certified by Project Director , SPMU
- Submission of baseline data as well as data for claim should be strictly as per the formats

shared by NPMU

- Data under all sub-indicators is required to be submitted at GP level for claiming the incentive under DLI#4 except for electricity feeder separation where data is required at block level

II. Finalization of Template for Claim of Incentive

The data for claiming the incentive includes GP wise information on annual incremental area taken under efficient water utilization practices. The achievement of the DLI will be based on the sum of the following sub-indicators:

a) *Year-on-year increase in area (in hectares) with efficient irrigation systems:* GP wise data on increase in area covered under the following water-efficient irrigation techniques in the Participating States will be used to determine incentive under this sub-indicator :

- Micro Irrigation (Sprinkler)
- Micro Irrigation (Drip)
- Irrigation through pipelines

b) *Year-on-year increase in area (in hectares) with a shift in cropping patterns:* GP-wise area with a shift from existing high water consuming crops to low water consuming crops will be considered for determining the annual increase in area with a shift in cropping pattern. The following information will be analyzed to estimate this area:

- Name of existing High water-consuming Crop
- Name of replacing low water-consuming crop
- Area with crop shifting (in Ha)
- Name of Dept/CSR/NGO/ self-financing
- Name of Scheme

A document on 'Crop Diversification: Scope under Atal Bhujal Yojana' is prepared and enclosed as ***Annexure III***

c) *Year-on-year increase in area (in hectares) under other water-saving methods:* GP-wise data on the annual increase in area covered under other water-saving agriculture methods as given below shall be considered for determination of incentive under this sub-indicator:

- Super seeder /happy seeder/zero tillage
- Polyhouse /net house
- Mulching
- Hydrogel
- DSR
- Other water-saving agricultural practices

A brief note on the above mentioned agricultural water efficient practices are given in ***Annexure IV***

d) *Year-on-year increase in the number of blocks where electricity feeder separation has been adopted:* Electricity line distribution data collected at the block level will be used to determine the annual increase in number of blocks adopting feeder separation for agriculture. The achievement will be evaluated based on

- Annual incremental number of blocks adopting feeder Separation that have gone functional in the entire block

The claim for increase in area under demand side interventions needs to be provided separately for area covered through convergence, Atal Jal incentive fund and self/private financing under various sub-indicators .

After due consideration of the state wise feedback, a standard MIS template has been devised for DLI#4 and made available on Atal Jal website for the States to enter gram panchayat wise data under various sub-indicators of DLI#4. The MIS template for entering claim data is provided in ***Annexure V***.

List of documents to be provided with claim data during submission to NPMU:

- Department wise sample source document for each intervention needs to be uploaded in the DLI#4 module of MIS.
- All the source documents related to claim under crop shifting needs to be uploaded in the MIS for verification at NPMU.
- All source documents should contain information on year of implementation, department/agency name, intervention name, gram panchayat wise incremental area and beneficiary details.
- The supporting documents on crop shifting from line departments/ CSR/NGOs/gram panchayat should include name of the scheme, GP wise name of existing high water consuming crop, replacing low water consuming crop, area with crop shifting & name of beneficiaries.
- Claim area through self-financing will be accepted provided submission of Certificate from concerned Panchayat Secretary/ Sarpanch mentioning beneficiary names, area covered and name of activities implemented on field. All such claims under efficient irrigation, other water saving methods & crop shifting through self/private financing are required to be verified preferably at the field by SPMUs/DPMUs before submission to NPMU.
- The claim data entered by DPMUs in the MIS is to be verified and approved by SPMU for onward submission to NPMU. The claim from the States shall be accepted with the assumption that all relevant documents by different line departments/individuals/private companies/NGOs/Trusts, towards incentive claim at Gram Panchayat level have been duly checked and verified at SPMU before submitting to NPMU.
- SPMUs to ensure availability of all source documents (from the line departments/other sources) towards incentive claim at SPMU , so that the same can be produced at the time of verification by QCI/ any authorised person.

III. Verification methodology

The verification methodology comprises of two steps:

a) Desktop assessment of claim at NPMU
b) Physical verification of claim by QCI

a) Desktop assessment of claim at NPMU

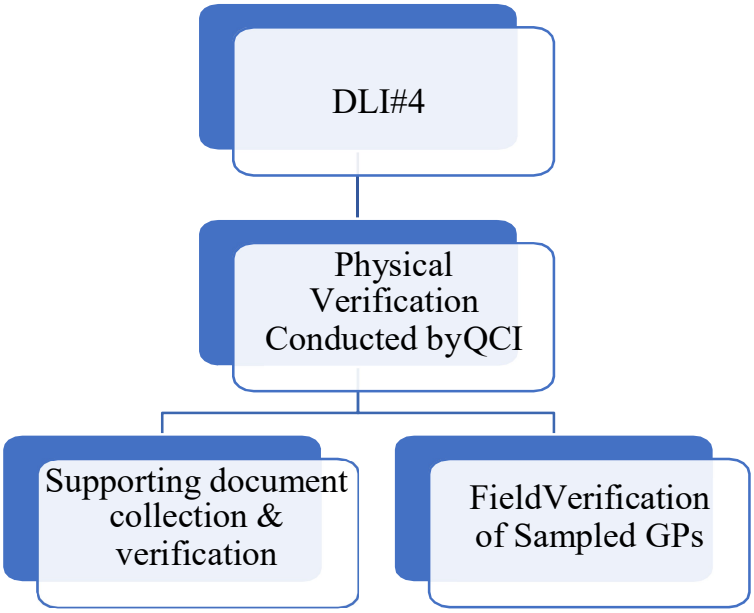
Desktop assessment of the submitted claim under DLI#4 is to be done by NPMU. The process to be followed for desktop assessment is given below-

- The claim of incremental area approved by SPMUs, through various modes of convergence such as on-going schemes/initiatives, Atal Jal incentive fund & self/private financing will be verified technically based on the information provided under demand-side interventions and sample supporting documents on the MIS.
- The claim for incremental area under crop shift will be verified based on the source documents on (a) existing water intensive crops & replacing low water consuming crops (as per ***Annexure III***) and (b) the purpose of the scheme through which crop shifting has been implemented as per State claim
- Claim for blocks taken under electricity feeder separation in the claim year will be verified in comparison with the baseline data and the source document from line department. The claim under this sub-indicator will be considered once the block is brought under feeder separation entirely.
- Any inconsistency in the data will be highlighted to the SPMUs for proper justification.

After completion of the desktop assessment, the admitted claim template will be shared with QCI for physical verification.

b) Physical verification of claim by QCI

The physical verification by QCI as TPGVA shall be done in the following way -



- QCI will take 20% of the GPs as sample for physical verification from each District. Each District will be divided into 4 quartiles based upon area claimed in a given GP under this DLI and then sample will be collected from each Quartile based upon weightage average.
- Document Verifiaction: QCI shall visit SPMU to collect and verify supporting documents pertaining to demand-side interventions against which area claims have been made by State.
- Field Verification: QCI shall verify the demand-side interventions under DLI#4 by visiting all sampled Gram Panchayats:

  Area claimed under demand-side interventions will be assessed through individual interviews of the beneficiaries'/community members as well as by physically examining the interventions, wherever available.
- The field verification shall be conducted with the assistance of on-field team consisting of SPMU/DPMU, Gram Panchayat officials and DIPs.

Process Flow

The protocol for DLI#4 verification ideally involves several steps and interlinked processes, an attempt has been made to consolidate the entire process flow in the form of a flow diagram for better understanding. The flow diagram is given below:

Annexure I

Baseline data of DLI-4																														
State:-							SUB-INDICATORS OF DLI-4																								
Sr. No.	Name of District	Name of Block	Name of GPs	Total area with MI proposed under WSP	Total area proposed for shifting to low water intensive crops under WSP (Ha)	Net Area (in Ha) with Efficient Irrigation System during the crop calendar Year 2020-21				Area under different crops (in Ha) as per crop calendar year 2020-21										Net area under other significant water saving method (Ha) used for agriculture in 2020-21									Does the Block have Electricity Feeder Separation as on 2020-2021 (Yes/ No)	Gross Irrigated Area (Ha)	Gross Cropped Area (Ha)
						Net Area under Sprinkler (Potable, Mini, Micro, Semi Permanent, Rain-Guns etc) Irrigation (Ha)	Net Area under Drip Irrigation (Ha)	Net Area under Irrigation through Pipelines (Ha)	Total	Area (Ha) Under High Water Crops				Surface Area (Ha) Under Low Water Crops					Difference in area under High and low water crops (+/-)	DSR Paddy	Laser Land Levelling	Poly houses	Mulching	Hydrogel	Super seeder/Happy seeder/ Zero tillage	Other(specify)	Total			
										Crop 1	Crop 2	Crop 3	Total	Crop 1	Crop 2	Crop 3	Crop 4	Total												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		26	27	28	29	30
Block Wise Total						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Block Wise Total						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Source of data																			Certified by										
																			(Project Director, SPMU)										

Annexure II

S.N.	Crop/ Group of Crops	English Name	Botanical Name	Hindi Name
1	**Cereals**			
		Pearl millet	Pennisetum Typhoides	Bajra
		Barley	Hordeum vulgare	Jau
		Barnyard millet	Echinochloa frumentacea	Sawan
		Sorghum	Sorghum bicolor	Jowar
		Common Millet	Panicum milliaceum	Cheena
		Little Millet	Penicum milliare	Kutki
		Foxtail Millet	Setarisiaitalica	Kangani
		Kodo Millet	Paspalum scrobiculatum	Kodo
		Maize or Indian corn	Zea mays	Makka
		Oat	Avena sativa	Jaie
		Finger millet	Eleusine coracana	Mundua, Ragi
		Paddy (Rice)	Oryza sativa	Dhan (Chawal)
		Wheat	Triticum acstivum	Gehun
2	**Pulses and Beans**			
		Black gram	Vigna mungo	Urad
		Chickpea (Bengalgram)	Cicer arietinum	Chana
		Chicking vetch	Lathyrus sativus	Khesari
		Cluster Bean	Cyamopiss tetragonoloba	Guar
		Cowpea	Vigna unguiculate	Lobia, Chawla
		Green Gram	Vigna radiata	Mung
		Horsegram	Dilichos biflorus	Kulthi
		Kidney bean	Phaseolus vulgaris	Rajma
		Moth bean	Vigna aconitifolia	Moth
		Lentil	Lens culimaris	Masur
		Peas	Pisum sativum vararvense	Matar
		Red gram (Pigionpea)	Cajanus cajan	Tur,Arhar

S.N.	Crop/ Group of Crops	English Name	Botanical Name	Hindi Name
3	**Oilseed**			
		Rapeseed &mustard	Brassica species	Sarso
		Groundnut	Arachis hypogea	Mungphali
		Soybean	Glucine max	Soyabean
		Linseed	Linum usitatissimum	Alsi
		Sunflower	Helianthus annuus	Surajmukhi
		Safflower	Carthamum tinctorius	Kusum
		Sesame	Sesamum indicum	Til
		Niger	Guizotica abyssinica L.	Ramtil,Jagni
		Castor	Ricinus communis	Arndi
		Coconut	Cocos nucifera	Nariyal
		Oil palm	Elaeis guineensis	Oilpalm
4	**Fibre crop**			
		Cotton	Gossypium sp.	Kapas
		Sunhemp	Crotalaria juncea	San
		Jute	Corchorus olitorius	Jute
5	**Sugar**	Sugarcane	Saccharum Officinarum	Ganna
6	**Fruits**			
		Apple	Malus sylvespris	Seb
		Apricot	Prunus armeniaca	Khoobani
		Cashewnut	Anaardium occidentale	Kaju
		Fig	Ficus carica	Anjeer
		Grape	Vitis vinifera	Angur
		Guava	Psidium guajava	Amrood
		Jackfruit	Artocarpur heterophyllus	Katahal
		Lemon	Citrus Lemon	Nimbu
		Lime	Citrus Urantifolia	Bara Nimbu
		Litchi	Litchi chinensis	Litchi
		Mango	Magnifera indica	Aam

S.N.	Crop/ Group of Crops	English Name	Botanical Name	Hindi Name
		Orange Mandar	Citrus reticulata	Santara, Narangi
		Papaya	Carica papaya	Papeeta
		Pear	Pyrus communis	Naspati
		Pineapple	Ananas comosus	Ananas
		Banana	Musa paradisiaca	Kela
		Pomegranate	Punica granatum	Anaar
		Sweet Orange	Citrus sincensis	Malta, Mosambi
		Sapota	Manilkara zapota	Chiku
		Ber	Ziziphus mauritiana	Ber, Bor
		Datepalm	Phoenix dactylifera	Khajur
7	**Vegetables**			
		Ash gourd	Benincasa hispida	Petha
		Beet	Beta vulgaris	Chukandar
		Bitter gourd	Momordica charantia	Karela
		Bottle gourd	Lagenaria siceraria	Lauki
		Brinjal	Lolanum melongena	Baingan
		Cabbage	Brassica oleracca var,Capitata	Band gobi
		Carrot	Daucus carota	Gajar
		Cauliflower	Brassica oleracca var Botrytis	Phul gobi
		Cowpea	Vigna unguiculate	Lobia
		Capsicum	Capsicum annuum	Shimla Mirch
		Cucumber	Cucumis sativus	Kheera
		French bean	Phaseolus vulgaris	Faras bean
		Indian flat bean or sem	Dolichos lablab	Sem
		Knol Khol	Brassica oleracea var,Gongylodes	Ganth gobi
		Spinach	Spinacia oleracea	Palak
		Amaranthus	Amaranthus sp.	Chaulai
		Lady's finger, Okra	Abelmoschus esculentus	Bhindi
		Little gourd	Cuccinia cordifolia	Kundur

S.N.	Crop/ Group of Crops	English Name	Botanical Name	Hindi Name
		Musk melon	Cucumis melo	Kharbooza
		Onion	Allium cepa	Piyaz
		Pointed gourd	Trichosanthes dioica	Parwal, Potal
		Potato	Solanum tuberosum	Aaloo
		Sweet potato	Ipomoea batatas	Sakarkand
		Pumpkin	Curcurbita moschata	Sitaphal, La lKaddu, Kumbhra
		Beetroot	Beta vulgaris	Chukandar
		Radish	Raphanus satius	Muli
		Round gourd ofIndia	Citrullus vulgaris var,fistulosus	Tinda
		Snap melon	Cucumis melovvar, momordica	Phoot
		Snake gourd	Trichosanthes anguina	Chachinda
		Tomato	Lycopersicon escen lentum	Tamatar
		Turnip	Brassica rapa	Shalgam
		Water melon	Cirtrullus vulgaris	Tarbooz
		Drumstick	Foeniculum vulgare	Sahjan, Moringa
8	**Drugs and Narcotics**			
		Betal Leave	Piper betle	Paan
		Betalnut(arecanut)	Areca catechu	Supari
		Indian hemp	Cannabis sativa	Bhang
		Opium	Papaver somniferum	Afeem
		Tobacco	Nicotiana tabacum and Nicotianarustica	Tambaku
9	**Condiments and Spices**			
		Black pepper	Piper nigrum	Kalimirch
		Cardamom, Cardamom	Elettaria cardamomum	Chhoti Ilaichi
		Chilies	Capsicum annuum	Mirch
		Coriander	Coriandrum sativum	Dhania
		Cumin	Cuminum cyminum	Jeera

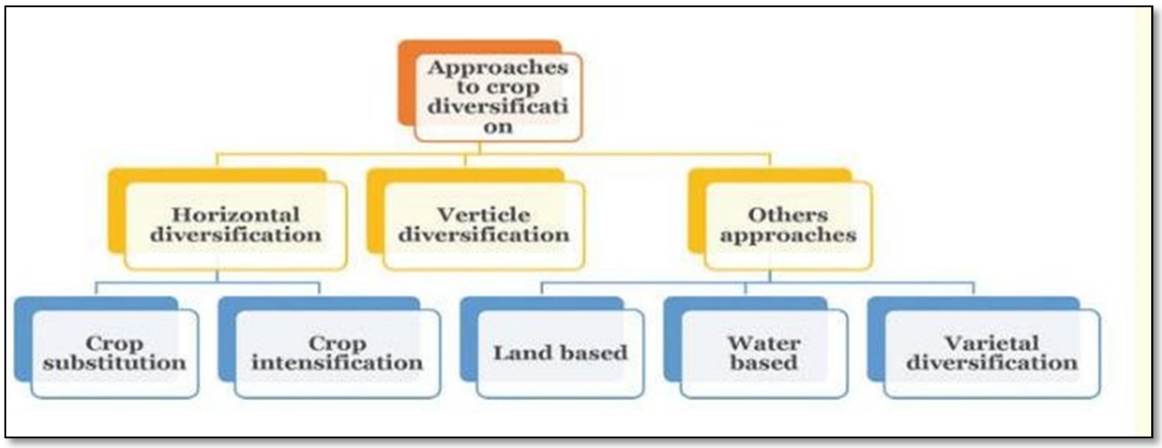
S.N.	Crop/ Group of Crops	English Name	Botanical Name	Hindi Name
		Ajwain	Trachyspermum ammi L.	Ajwain
		Fennel	Foeniculum vulgare	Sauf
		Ginger	Zingiber officinale	Adrak
		Turmeric	Curcuma longa	Haldi
		Fenugreek	Trigonella foenum-graecum	Methi
		Garlic	Allium sativum	Lahsun

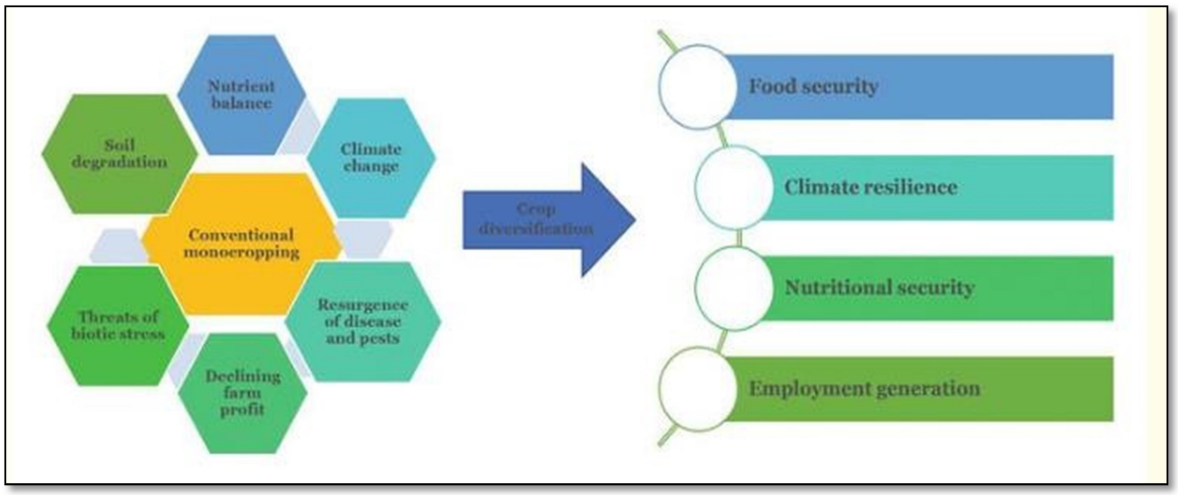
Annexure III

Crop Diversification: Scope under Atal Bhujal Yojana

Crop diversification in general means growing more than one crop in an area. It refers to a shift from the regional dominance of one crop to the regional production of multiple crops. Diversification can be accomplished by adding a new crop species or different variety, or by changing the cropping system currently in use. Crop diversity encompasses several aspects such as crop species diversity, varietal diversity within crop species, and genetic diversity within crop species. Diversification can be done at the farm level as well as household level.

Crop diversification is recognized as one of the most feasible, cost-effective, and rational ways of developing a resilient agricultural cropping system. Crop diversification is a demand-driven, need-based, and situation-specific dynamic concept.





Intercropping, diverse crop rotations, mixed cropping, cultivation of grain legumes in generally cereal-dominated systems, relay cropping, alley cropping, and regionally adapted varieties or various combinations are all examples of agricultural diversification strategies.

Under Atal Bhujal Yojana, crop diversification aims at replacing high water-consuming crops with low water-consuming crops to reduce the consumption of groundwater.

High and Low water-consuming crops classification:

Consultation with agricultural experts from various institutions revealed that there is no fixed classification of crops based on water consumption. The following classification was made based on literature review and the cultivation & irrigation practices of these crops in the field.

High water consuming crops-. Paddy, Sugarcane, Banana,Turmeric,Mango, Orange, Pineapple, Grape, Cotton, and Alfalfa are some high- water-consuming crops.

Low water-consuming crops: Millet (Little millet, Kodo millet, Pearl millet, Finger millet, Sorghum, etc), Pulses (Chickpea, Moth bean, Lentil, Red gram, Green Gram, Black Gram, Horse Gram, etc.) and some Oilseeds (Linseed, Sesamum, Mustard, Safflower, etc.)

Dryland perennial horticulture crops: Pomegranate, Aonla, Guava, Jamun, Ber, Date palm, Karonda, Acid lime, and Custard apple.

Water requirement of crops- Crop water requirement data from various sources aregiven in the below table for reference.

Crop	Water requirement (mm)	Crop	Water requirement (mm)
Rice	1200	Tomato	600 – 800
Wheat	450 – 650	Potato	500 – 700
Sorghum	450 – 650	Pea	350 – 500
Maize	500 – 800	Onion	350 – 550
Sugarcane	1500 – 2500	Chillies	400 – 600
Sugarbeet	550 – 750	Cabbage	380 – 500
Groundnut	500 – 700	Banana	1200 – 2200
Cotton	700 – 1300	Citrus	900 – 1200
Soybean	450 – 700	Grapes	700 – 1200
Tobacco	400 – 600	Mango	1000 – 1200
Beans	300 – 500	Turmeric	1200 – 1400

Source: http://www.angrau.ac.in/media/7380/agro201.pdf

Crop	Water Requirement (mm)	Crop	Water Requirement (mm)
Rice	900-2500	Chillies	500
Wheat	450-650	Sunflower	350-500
Sorghum	450-650	Castor	500
Maize	500-800	Bean	300-500
Sugarcane	1500-2500	Cabbage	380-500
Groundnut	500-700	Pea	350-500
Cotton	700-1300	Banana	1200-2200
Soybean	450-700	Citrus	900-1200
Tobacco	400-600	Pineapple	700-1000
Tomato	600-800	Gingelly	350-400
Potato	500-700	Ragi	400-450
Onion	350-550	Grape	500-1200

Source: https://indiawaterweek.thewaternetwork.com/article-FfV/micro-irrigation-in-india-an-assessment-of-bottlenecks-and-realities-8KehyZcWG6HrxYNy2s4IoQUnderground/above-ground
https://www.researchgate.net/figure/The-water-require-of-different-crops-grown-in-India_tbl1_332632426

Annexure IV

Brief note on water-saving agriculture methods considered under DLI#4

Super seeder machines are the one-pass solution that combines the tasks of tilling, sowing, and seedbed covering. It is a combination of Seed Planter and Rotary Tiller with Press Wheels. The machine is the ultimate solution to removing paddy stubbles, mixing them with the soil, preparing the land, and sowing seeds. The mulch cover of rice straw may also help in mitigating evaporation losses.

A **Happy Seeder** is a no-till planter, towed behind a tractor, that sows (plants) seeds in rows directly without any prior seedbed preparation. It consists of a straw managing chopper and a zero till drill that makes it possible to sow new crop in the residue of the previous crop. It deposits the residue of the previous crop over the sown field as mulch. Mainly, it is used to sow wheat after the paddy harvest in North India. It also helps in saving water just like super seeder.

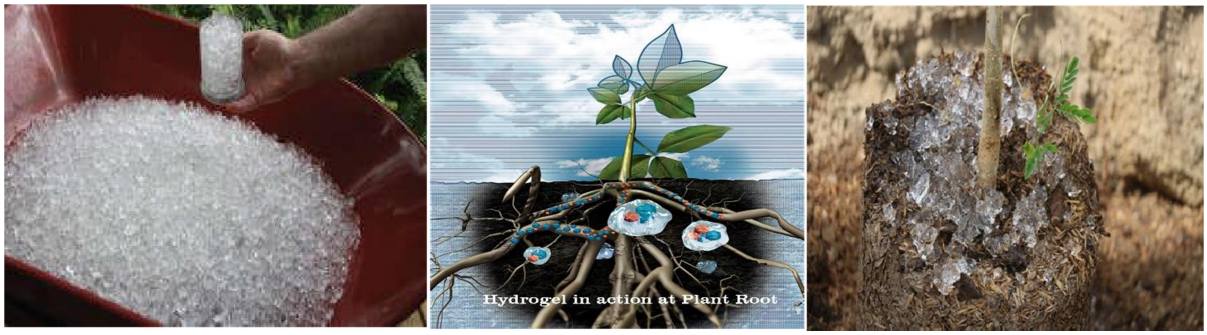
Zero tillage is the process where the crop seed will be sown through drillers without prior land preparation and disturbing the soil where previous crop stubbles are present. Zero tillage not only reduce the cost of cultivation it also reduces the soil erosion, crop duration and irrigation requirement and weed effect which is better than tillage. Zero Tillage (ZT) also called No Tillage or Nil Tillage. The machine used for zero tillage is called zero till seed cum fertilizer drill. No /Zero tillage reduces the compaction of the soil and reduces the water loss by runoff and prevents soil erosion. It also helps in saving evaporation losses that happens during land preparation.

Polyhouse: Polyhouse or a greenhouse is a house or a structure made of translucent material like glass or polyethylene where the plants grow and develop under controlled climatic conditions. In India, Polyhouse farming is the most popular greenhouse technology for its low cost of construction. **I**t creates a microclimate surrounding the crops that help in maximum growth regarding production and quality. It reduces evapotranspiration losses, the use of micro irrigation techniques in polyhouse increases the water use efficiency.

Mulching: Mulching is the process or practice of covering the soil/ground to make more favourable conditions for plant growth, development, and efficient crop production. Mulch is a technical term that means 'covering of soil'.

Plastic mulching is a thin film of polyethylene used to cover up the soil. Polyethylene is preferred because of its greater permeability to longwave radiation which can increase the temperature around plants during the night times. Mulch saves water by reducing evaporation losses.

Hydrogel: A hydrogel is a three-dimensional (3D) network of hydrophilic polymers that can swell in water and hold a large amount of water while maintaining the structure due to chemical or physical cross-linking of individual polymer chains.
Natural hydrogels are those gels, whose polymers have natural origins such as gelatin and collagen. Synthetic hydrogels, on the other hand, are synthesized using synthetic polymers such as polyamides and polyethene glycol.
Hydrogel works as water reservoirs around the root zones of the plant. In presence of water, it expands to around 200-800 times the original volume. When the polymers come in contact with water, the water penetrates the hydrogel system by osmosis. When the surrounding around the root zone begins to dry up, the hydrogel gradually dispenses up to 95% of its stored water to plant absorption.

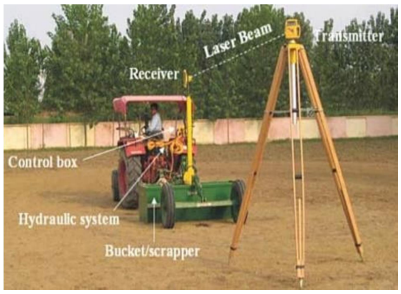


Direct Seeding Of Rice (DSR)- DSR refers to the process of establishing a rice crop from seeds sown in the field rather than by transplanting seedlings from the nursery. Direct seeding can be done by sowing pre-germinated seed into puddled soil (wet seeding) or standing water (water seeding) or a prepared seedbed (dry seeding).

Under the conventional rice establishment system, the nursery is raised from seed; 4-5 week old seedlings are uprooted from the nursery and then transplanted in the main field. Under DSR, the seed is directly sown in the main field. DSR technique **can help save 15% to 20% water.**



Laser Land Levelling: Laser levelling is a process of smoothing the land surface (± 2 cm) from its average elevation using laser-equipped drag buckets. This practice uses large horsepower tractors and soil movers that are equipped with global positioning systems (GPS) and/or laser-guided instrumentation so that the soil can be moved either by cutting or filling to create the desired slope/level. This technique is well known for achieving higher levels of accuracy in land levelling and offers great potential for water savings and higher grain yields.




An average of 1.98 million litres of water is required to grow a one-acre crop (Aryal and Jat, 2015). Precise land leveling can save 0.35 to 0.45 million litres of water for the same crop. Along with water saving, crop yields will increase by at least 7 percent for rice and 7–9 per cent for wheat (Aryal and Jat, 2015) and these figures can rise to 12 per cent. Other advantages that farmers observed included reductions in irrigation time, labor costs, reduces drudgery, uniform seed germination, reduced weed germination, etc.

Annexure V

State: Delhi_7 » District: North_80 | Select Block | Select GramPanchayat | 2022-23 | Search

Adoption of practices for efficient water use

Report

Increase in area with efficient irrigation system (Ha)				
Irrigation System	Area covered through convergence	Area covered exclusively through Atal Jal Incentive	Area covered exclusively through self/private financing	Total area
Sprinkler				
Drip				
Pipeline Irrigation				
Total				

Save

Increase in area with crop shifting (Ha)							
S.No.	Name of existing high water consuming crop	Name of replacing low water consuming crop	Area with shifting from high to low water consuming crop	Name of Department	Name of Scheme	Edit	De

+ Add Data

Increase in area under other water saving agriculture method (Ha)				
Water Saving Methods	Area covered through convergence	Area covered exclusively through Atal Jal incentive	Area covered exclusively through self/private financing	Total A
Super seeder /happy seeder/zero tillage				
Polyhouse /Net House				
Plastic mulching				
Hydrogel				
DSR				

Electricity feeder separation

Back To Module

Select StateName | Select District | Select Block | 2022-23 | Search

Sr.No	State Name	District Name	Block Name	Year	Brought under feeder separation in claim duration