TRAINING MANUAL FOR MGNREGS – IMPACT MONITORING TOOL

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1. Introduction

The MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) was a law passed in 2005 under which the Central government proposed to implement a nation-wide social security scheme to guarantee the "right to work", targeting individuals residing in rural regions. The programme was officially introduced in February 2006, in 200 districts in its first phase. This was further expanded in the second phase in 2007, with another 30 districts added to the total and concluded with the final phase in 2008 during which the remaining districts were covered. The Act stands as one of the India's largest employment programs for over a decade. The program's core objective is to enhance livelihood security in rural areas. It guarantees at least 100 days of wage employment per year to every household. While wage employment remains a key focus, MGNREGA also envisions the creation of assets that strengthen natural resource management. These assets aim to address crucial issues like drought, deforestation, and soil erosion, promoting sustainable development in the long run.

Extensive research has been conducted to assess MGNREGA effectiveness as a safety net program, analysing its impact on wage, income, and consumption. However, a gap exists in understanding the nature of the created assets and their lasting impact on people's lives. MGNREGA is often primarily viewed as a job creation program, neglecting its potential for significant asset creation (Reddy, 2016). To address this issue, IWMI along with GIZ developed an excel-based tool which aims to evaluate the potential impact generated through the assets created under MGNREGA. This is part of Indo-German bilateral project 'Water Security and Climate Adaptation in Rural India (WASCA)'. The objective of the project is to work towards enhancing water resources management with regards to water security and climate adaptation in rural areas through an integrated approach at national, state, and local level. The project is commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) in partnership with the Ministry of Rural Development (MoRD) and Ministry of Jal Shakti (MoJS) in India and implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

2. MGNREGA Impact Monitoring Tool

The tool is an interactive online tool which captures the potential outcomes of MGNREGA works. The tool is designed as a value addition to the existing MIS (Management Information System) portal and will determine the potential impact of MGNREGA works and provide data for comparison of the performance of a work/asset over time and across different villages, blocks, and districts. The tool considers data collection feasibility, the purpose of each asset type (construction, repair, or renovation), and the specific work involved. Designed for immediate completion after project finalization, the tool gathers qualitative and quantitative indicators to provide a holistic picture of the asset's estimated impact.

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3. Work Category wise Input Indicators

All 266 activities are listed in the tool with indicators defined. Below text gives the description of the indicators. These works are divided into broader categories (e.g., Non-NRM, check dams, plantations) which have similar indicator.

A. Category: Non-NRM Activities

1. Construction of PMAY-G House Building for Individuals	
Work Type	Construction of PMAY-G or State Scheme House Building for Individuals
Input Indicator 1	Number of Beneficiary households

Number of beneficiary households: This indicates the single household that benefitted for the PMAY-G scheme.

2. Community Sanitary Complex	
Work Type	**Construction of Community Sanitary Complex**
Input Indicator 1	Number of Beneficiary households

Number of beneficiary households: This indicates the number of households benefitted from the construction of Community Sanitary Complex

3. Anganwadi	
Work Type	**Construction of Anganwadi Building for Community**
Input Indicator 1	Number of Beneficiary households
Input Indicator 2	Number of people/children

Number of beneficiary households: This indicates the estimated number of families who will have improved access to childcare and early childhood education services due to the construction of the Anganwadi building.
Number of children/women: This represents the estimated number of children who will benefit from early childhood education programs and the number of women who will have access to maternal health services offered at the Anganwadi.

4. Schools	
Work Type	**Construction of Compound Wall for Government Schools for Community**
Input Indicator 1	Number of students

Number of students: The number of students who will study in the school.

5. *Foodgrain Storage*	
Work Type	**Repair and Maintenance of Food grain Storage Building for Community**
Input Indicator 1	Number of Beneficiary households

6. *Roads*	
Work Type	Construction of Bitumen Top / Mitti Muram / WBM / Cement Concrete Roads for Community
Input Indicator 1	Length of Road

Length of road: The length of the road constructed. Unit of measurement is in meters.

7. Shelters for Livestock	
Work Type	**Construction / Repair and maintenance of shelter for Individuals / Community (Cattle shelter, goat shelter, Piggery shelter, poultry, livestock shelter)**
Input Indicator 1	Number of Beneficiary households
Input Indicator 2	Number of livestock benefitted

Number of beneficiary households: This indicates the estimated number of families whose livestock will have access to the shelter.
Number of livestock benefitted: Number of livestock benefitted by the constructed shelter.

8. Playground	
Work Type	**Construction of Playfield for Community**
Input Indicator 1	Number of Beneficiary Households

Number of Beneficiary households: *The number of households whose kids usually play in the constructed field.*

B. Bunds

1. Bunds (Construction)	
Work Type	Construction of peripheral / field / contour / graded bund (Earthen / Pebble / Stone) for community/individuals
Input Indicator 1	Length of Bunding (m)
Input Indicator 2	Area (in hectares) expected to be treated for soil and water conservation and improved crop cultivation through bunding
Input Indicator 3	Number of Beneficiary households

Length of bunding: Total length of the bunds constructed. Unit of measurement for this indicator is in meters (m).

Area (in hectares) expected to be treated for soil and water conservation and improved crop cultivation through bunding: Expected area to be treated for in-situ moisture conservation or risk of erosion for enhanced crop cultivation via bunding practices. Unit of measurement for this indicator is hectare.

Number of Beneficiary households: The number of households that could potentially benefit

Example image of Bunds constructed

1. In the above example, the bund is constructed for 50 m, hence "Length of bunding" is 50m
2. Bund is covering and improving moisture retention (reducing runoff, erosion) in 2 ha of land, hence "Area (in hectares) expected to be treated for soil and water conservation and improved crop cultivation through bunding" is 2 ha.
3. Number of households owning the 2 ha are the beneficiaries, hence "Number of beneficiary households" is 2.

2. Bunds (Repair and maintenance)	
Work Type	**Repair and maintenance of peripheral / field / contour / graded bund (Earthen / Pebble / Stone) for community/individuals**
Input Indicator 1	Length of Bunding repaired (m)
Input Indicator 2	Additional Area (in hectares) expected to be treated for soil and water conservation and improved crop cultivation through bunding
Input Indicator 3	Number of Beneficiary households

Length of bunding repaired: Total length of the bunds repaired. *Unit of measurement for this indicator is in meters (m).*
Original area (in hectares) protected by the portion of bunding repaired: The expected area where the soil & moisture retention is expected to increase due to reduced runoff and soil erosion from the repair done. *Unit of measurement for this indicator is in hectares (ha).*
Number of Beneficiary households: The number of households that could potentially benefit from repair and maintenance of bunds.

Example image of Bunds constructed

1. In this example image, in the existing bund, 25 m of the bund is repaired, hence "Length of bunding repaired" is 25m.
2. Repaired length of bund is covering and protecting 1 ha of land, hence "Additional Area (in hectares) expected to be treated for soil and water conservation and improved crop cultivation through bunding" is 1 ha.
3. Number of households owning the 1 ha are the beneficiaries, hence "Number of beneficiary households" is 1.

C. Land development

1. Land Development (Silvipasture grasslands)	
Work Type	**Development of Silvipasture Grasslands for Community/individuals**
Input Indicator 1	Area (in hectares) developed as Silvipasture grasslands
Input Indicator 2	Number of livestock benefitted
Input Indicator 3	Number of beneficiary households

Area (in hectares) developed as Silvipasture Grasslands: *Total land area that has been converted into grasslands with agroforestry (intercropping of trees). Unit of measurement for this indicator is in hectares (ha).*
Number of livestock benefitted: *Total number of livestock's using the developed silvipasture grasslands for grazing.*
Number of Beneficiary households: *Households that benefitted will include households that owns the livestock, and using the products from the silvipasutre grasslands.*

2. Land Development (chaur land, fallow land)	
Work Type	**Development of Chaur land, fallow land.**
Input Indicator 1	Area (in hectares) made suitable for productive use (grazing / plantation / horticulture, etc).
Input Indicator 2	Number of beneficiary households

Area (in hectares) developed as Silvipasture Grasslands: *Total land area made suitable for productive use for one or more purpose such as grazing / plantation / horticulture, etc. Unit of measurement for this indicator is in hectares (ha).*
Number of livestock benefitted: *Total number of livestock using the developed silvipasture grasslands for grazing.*
Number of Beneficiary households: *Households that benefitted will include households that owns the livestock, and using the products from the silvipasutre grasslands.*

3. **Land Development (waterlogged land, wasteland)**	
Work Type	**Levelling / shaping and reclamation of waterlogged land, levelling /shaping of wasteland.**
Input Indicator 1	Area (in hectares) estimated to be protected/reclaimed for productive use from waterlogging/waste land
Input Indicator 2	Number of beneficiary households

Area (in hectares) estimated to be protected/reclaimed for productive use from water logging/waste land: Total land area made suitable for productive use for one or more purpose by levelling, shaping and reclamation of waterlogged areas and waste land. <u>Unit of measurement for this indicator is in hectares (ha).</u>

Number of Beneficiary households: Households that benefitted form by levelling, shaping and reclamation of waterlogged areas and fallow land.

D. Wells

1. **Well**	
Work Type	**Construction of Irrigation Open Well for Individuals / Community / Groups**
Input Indicator 1	Irrigation potential created: Irrigated area (in hectares) covered due to construction of well
Input Indicator 2	Number of beneficiary households

Irrigation potential created: Irrigated area (in hectares) covered due to construction of well: Area that is covered under irrigation due to construction of open well. <u>Unit of measurement for this indicator is in hectares (ha).</u>

Number of Beneficiary households: The number of households that could potentially benefit from construction of irrigation open well.

E. Canal

1. Canal (construction)	
Work Type	**Construction of feeder / distributary / minor / sub-minor canal**
Input Indicator 1	Irrigation potential created: Irrigated area (in hectares) covered due to construction of canal
Input Indicator 2	Number of Beneficiary households

Irrigation potential created: Irrigated area (in hectares) covered due to construction of canal: Area that is covered under irrigation due to construction of canal. Unit of measurement for this indicator is in hectares (ha).

Number of Beneficiary households: The number of households that could potentially benefit from construction of canal.

2. Canal (Lining of canals)	
Work Type	**Lining of feeder / distributary / minor / sub-minor canal**
Input Indicator 1	Number of days water is available in canal
Input Indicator 2	Additional area brought under irrigation (Yes/No)
Input Indicator 3	Additional Irrigated area covered (ha)
Input Indicator 4	Length of canal lined (m)
Input Indicator 5	Width of canal (m)
Input Indicator 6	Depth of canal (m)
Input Indicator 7	Command area served by the canal (ha)
Input Indicator 8	Number of Beneficiary households

Command area served by the canal: The original command area served by the canal according to the administrative records. Unit of measurement for this indicator is in hectare.

Any additional area brought under irrigation (Yes/No): Whether the lining of canal has covered additional area for irrigation? (Yes or No).

Additional Irrigated area covered: If yes, additional area covered under irrigation by lining of canal. Unit of measurement for this indicator is in hectare (ha).

Number of Beneficiary households: Additional households who got access to water to irrigated their land because of lining of canal

Number of days water is available in canal: The number of days/year water is expected to be available in the canal in a year.

Length of lined canal: The length of the canal that will be lined. Unit of measurement for this indicator is in meter (m).

Width of lined canal: The width of the canal that will be lined. Unit of measurement for this indicator is in meter (m).

Depth of lined canal: The depth of the canal that will be lined. Unit of measurement for this indicator is in meter (m).
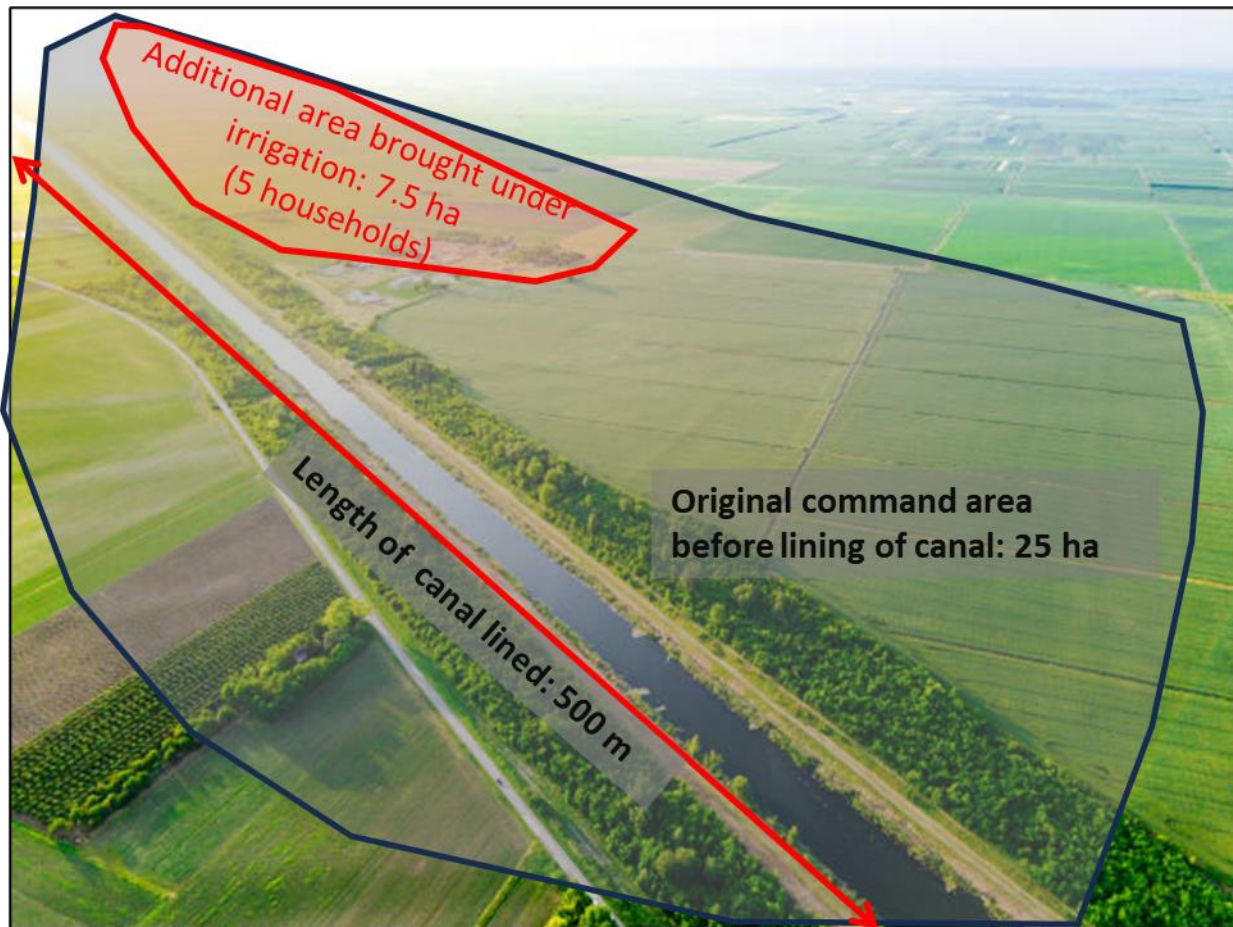
1. "Command area served by the canal (ha)" is the original designed command area irrigated by the canal as per administrative records. In this example, designed command area of the canal (ha)" is 25 ha (black boundary).

2. In this example, additional area brought under irrigation is "yes", and additional irrigated covered (ha) is 7.5 ha (Red boundary) due to lining of canal. This area is within the command area but was not served before.

3. "Number of beneficiary households": is the households owning additional irrigated area (for example: 5 households own 7.5 ha) due to lining of canal. Hence, "Number of Beneficiary households" is 5.

4. In this example image, in the existing unlined canal stretch, 500 m of the canal is lined. The canal width is 2m and depth is 1.5m, hence "Length of canal lined" is 500m, width of lined canal is 2m and depth of lined canal is 1.5m.

3. Canal (Renovation, repair and maintenance)	
Work Type	Repair and maintenance of feeder / distributary / minor / sub-minor canal
Input Indicator 1	Length of canal repaired (m)
Input Indicator 2	Additional area brought under irrigation (Yes/No)
Input Indicator 3	Additional Irrigated area (in hectares) created
Input Indicator 4	Command area served by repaired/renovated/maintenance of canal

Command area served by the canal: The original command area served by the canal according to the administrative records. <u>Unit of measurement for this indicator is in hectare.</u>
Length of canal repaired: The total length of the canal that has been repaired, renovated and maintained. <u>Unit of measurement is in meters (m).</u>
Additional area brought under irrigation (Yes/No): Additional irrigated area covered by the repaired canal for irrigation.
Additional Irrigated area (in hectares): If yes, additional irrigated area covered through repair and maintenance of the canal, if any.

F. Drainage

1. Drainage (Construction/repair/renovation of flood/diversion channel)	
Work Type	Construction of Flood/Diversion Channel for Community
Input Indicator 1	Area (in hectares) expected to be protected from flooding
Input Indicator 2	Number of Beneficiary households

Area (in hectares) expected to be protected from flooding: The expected area where the risk of flooding is significantly reduced or eliminated after the construction of flood/diversion channel. <u>Unit of measurement for this indicator is in hectares (ha).</u>
Number of Beneficiary households: The number of households that could potentially benefit from construction of flood/diversion channel.

2. Construction / Repair and maintenance of Culvert / cross drainage structures	
Work Type	**Construction of Culvert / cross drainage structures for Community**
Input Indicator 1	Length of culvert (m)

Length of culvert (m): *Length of culvert.* <u>*Unit of measurement for this indicator is in metres (m).*</u>

G. Drainage / erosion

1. Drainage / erosion (Construction / repair of storm water / grey water drain)	
Work Type	**Construction of storm water drain**
Input Indicator 1	Area (in hectares) expected to be protected from flooding
Input Indicator 2	Number of Beneficiary households

Area (in hectares) expected to be protected from flooding / erosion: *The expected area where the risk of flooding and erosion is reduced or eliminated after the construction of flood/diversion channel.* <u>*Unit of measurement for this indicator is in hectares (ha).*</u>

Number of Beneficiary households: *The number of households that could potentially benefit from construction of flood/diversion channel.*

2. Drainage / erosion (Upland bench terrace)	
Work Type	**Construction of upland bench terrace**
Input Indicator 1	Area (in hectares) to be treated for cultivation/horticulture
Input Indicator 2	Number of Beneficiary households

Area (in hectares) to be treated for cultivation/horticulture: Total area treated and reclaimed for cultivation/horticulture and other productive use. <u>*Unit of measurement for this indicator is in hectares (ha).*</u>

Number of Beneficiary households: *The number of households that could potentially benefit from using the constructed bench terrace.*

Area reclaimed: 4 ha
3 households

In this example image, 4 ha of bench terrace is constructed, and 3 households are benefitting from that. "Area (in hectares) to be treated for cultivation/horticulture as a result of bench terrace:" 4 ha, and "Number of beneficiary households": 3

3. Drainage / erosion (Continuous trenches)	
Work Type	**Construction of continuous contour trench**
Input Indicator 1	Infiltration Rate
Input Indicator 2	Average Length of contour trench (m)
Input Indicator 3	With of trench (m)
Input Indicator 4	Depth of trench (m)
Input Indicator 5	Number of days water retained in a year
Input Indicator 6	Area (in hectares) expected to be protected\reclaimed from soil erosion and with improved moisture regime
Input Indicator 7	Number of contour lines

Infiltration Rate: Indicates the rate at which water is entering into the soil per hour (i.e. depth of the water layer (in mm) that can enter in the soil in an hour). Unit of measurement is millimetres/hour (mm/hour).
Number of contour lines: Number of contour lines on which contour trench has been constructed.
Average length of contour trench: Average length of the contour trench on a single contour line from one end to the other end. Unit of measurement is in meters (m).
Depth of trench: The vertical distance between ground level to the bottom of the trench. Unit of measurement is in meters (m).
Number of days water retained in a year: The number of days that trench is expected to retain water in a year.
Area (in hectares) expected to be protected\reclaimed from soil erosion and with improved moisture regime: The expected area where the risk of erosion is significantly reduced or eliminated, and soil moisture storage is improved after the construction of continuous contour trenches. Unit of measurement for this indicator is in hectares (ha).

4. Drainage / erosion (Staggered trenches)	
Work Type	**Construction of staggered trench**
Input Indicator 1	Infiltration Rate
Input Indicator 2	Average length of staggered trench (m)
Input Indicator 3	With of trench (m)
Input Indicator 4	Depth of trench (m)
Input Indicator 5	Number of days water retained in a year
Input Indicator 6	Area (in hectares) expected to be protected\reclaimed from soil erosion and with improved moisture regime
Input Indicator 7	Number of trenches

Infiltration Rate: *Indicates the rate at which water is entering into the soil per hour (i.e. depth of the water layer (in mm) that can enter in the soil in an hour).* *Unit of measurement is millimetres/hour (mm/hour).*

Average length of one staggered trench*: Average length of a single staggered trench. Unit of measurement is in meters (m).*

Depth of trench*: The vertical distance between ground level to the bottom of the trench. Unit of measurement is in meters (m).*

Number of days water retained in a year: *The number of days that trench is expected to retain water in a year.*

Area (in hectares) expected to be protected\reclaimed from soil erosion and with improved moisture regime: *The expected area where the risk of erosion is significantly reduced or eliminated, and soil moisture storage is improved after the construction of continuous contour trenches. Unit of measurement for this indicator is in hectares (ha).*

Number of trenches: Total number of trenches constructed under one asset id.

H. Check dams (erosion)

1. **Check dams (erosion)**	
Work Type	Construction of Brushwood / Boulder / Gabion Check Dam for Community
Input Indicator 1	Infiltration rate
Input Indicator 2	Width of stream
Input Indicator 3	Height of check dam
Input Indicator 4	Length of water spread area
Input Indicator 5	Maximum area of water spread
Input Indicator 6	Area (in hectares) protected from flooding/erosion
Input Indicator 7	Number of wet spells

Infiltration Rate: *Indicates the rate at which water is entering into the soil per hour (i.e. depth of the water layer (in mm) that can enter in the soil in an hour).* Unit of measurement is millimetres/hour (mm/hour).

Width of stream: *Horizontal distance between the two banks of the stream at the check dam location. It provides an indication of how wide the stream is (horizontal distance between two banks), helping to understand the stream's width.* Unit of measurement is in meters.

Height of check dam: *The height at which check dam is being built. The vertical distance from the base of the check dam (i.e. from streams bed level) to its highest point (i.e. top of check dam's body wall).* Unit of measurement is in meters (m).

Length of water spread area: *This measures how far the water extends on the upstream side of the check dam. It indicates the distance from the check dam to the furthest point where the water spreads out.* Unit of measurement is in meters.

Maximum area of water spread: *The extent of the water surface area created by the check dam at its full storage capacity.* Unit of measurement is in meter square.

Area (in ha) protected from flooding/erosion: *The extent of land that benefits from reduced flood risk and soil erosion, contributing to improved land stability due to the presence of the check dam.* Unit of measurement is hectares

Number of wet spells: *Count of distinct periods of significant rainfall events in a year. To be considered a distinct rainfall event - Each wet spell represents a continuous duration of rainfall sufficient to produce runoff that reaches the check dam.*
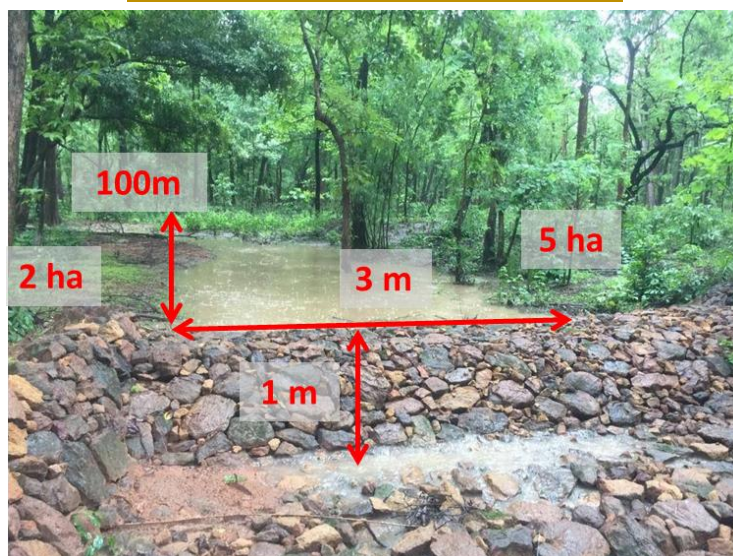
For example, if you are analyzing the precipitation pattern over a month:

- *Example:*
  - *Days 1-3: Precipitation occurs each day.*
  - *Days 4-7: No precipitation.*
  - *Days 8-10: Precipitation occurs each day.*
  - *Days 11-15: No precipitation.*
  - *Days 16-18: Precipitation occurs each day.*

*In this case, you would have **three** wet spells:*

1. *Days 1-3*
2. *Days 8-10*
3. *Days 16-18*

Example image of boulder check dam

1. In this example image (boulder check dam), Width of the stream is 3m wide, and same length as the check dam. Hence, *"Width of stream" is 3 m.*
2. Top level of check dam is 1m from the bottom of the check dam (i.e. stream bed level), hence, *"Height of the check dam" is 1 m.*
3. "Length of water spread area: In this example, Length of the water spreads/stored upto 100m from the check dam location. Hence, *"Length of water spread area" is 100 m.*
4. Maximum area of water spread is the surface area of water spread behind the check dam. It is calculated by multiplying *"Width of the stream"* and *"Length of the water spread area".* Hence *"Maximum area of water spread" is 300 m².* (100m X 3m = 300m²).
5. Check dam protects 7 ha of catchment area on either sides of the stream banks from erosion and flooding. Hence, *"Area (in ha) protected from flooding/erosion" is 7 ha.*
6. Same approach applies to gabion and brushwood check dam.

I. Check dams (storage)

7. Check dam (Storage)	
Work Type	**Construction of Earthen / Masonry / Cement concrete Check Dam for Community**
Input Indicator 1	Infiltration Rate
Input Indicator 2	Width of Stream
Input Indicator 3	Height of Check Dam
Input Indicator 4	Length of water spread area
Input Indicator 5	Number of days water retained in a year
Input Indicator 6	Maximum area of water spread

Input Indicator 7	Farmer use water for irrigation (Yes/No)
Input Indicator 8	Expected Area check dam will provide irrigation
Input Indicator 9	Number of Beneficiary households

Infiltration Rate: *Indicates the rate at which water is entering into the soil per hour (i.e. depth of the water layer (in mm) that can enter in the soil in an hour).* *Unit of measurement is millimetres/hour (mm/hour).*

Width of stream: *Horizontal distance between the two banks of the stream at the check dam location. It provides an indication of how wide the stream is from one side to the other, helping to understand the stream's width.* *Unit of measurement is in meters (m).*

Height of check dam: *The height at which check dam is being built. The vertical distance from the base of the check dam (i.e. from streams bed level) to its highest point (i.e. top of check dam's body wall).* *Unit of measurement is in meters (m).*

Length of water spread area: *This measures how far the water extends on the upstream side of the check dam. It indicates the distance from the dam to the furthest point where the water spreads out.* *Unit of measurement is in meters (m).*

Number of days water retained in a year: *The number of days that check dam is expected to retain water in a year.*

Maximum area of water spread: *The maximum surface area that water is expected to cover behind the check dam.* *Unit of measurement is meter square (m2).*

Expected area check dam will provide irrigation: *Maximum area that is expected to receive irrigation from the check dam. It indicates the extent of agricultural land that can be irrigated using the water stored by the check dam* *Unit of measurement is in hectare (ha).*

Number of Beneficiary households: *The number of households that could potentially benefit from construction of earthen check dam.*

Example image of masonry check dam
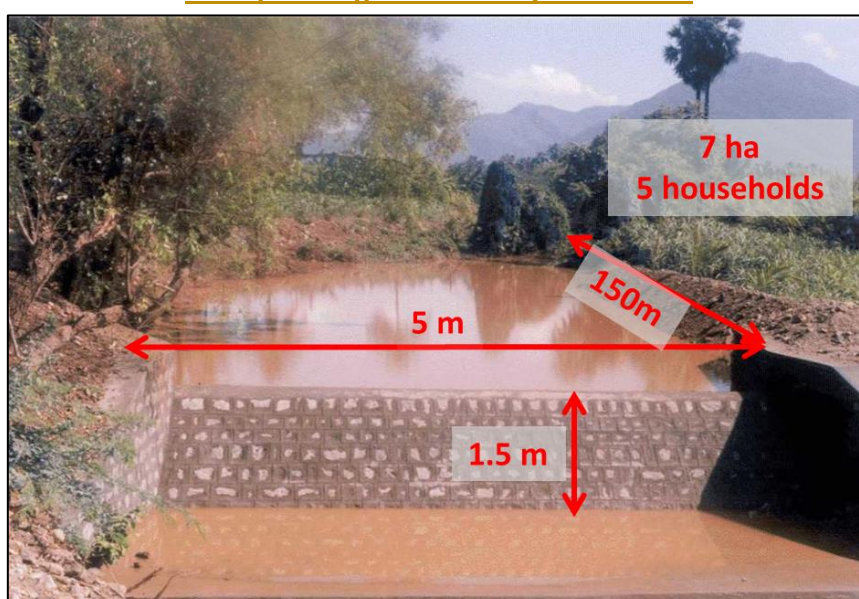
1. In this example image (masonry check dam), average width of the stream is 5m wide. Hence, *"Width of stream" is 5 m.*
2. Top level of check dam is 1.5m from the bottom of the check dam (i.e. stream bed level), hence, *"Height of the check dam" is 1.5 m.*
3. Length of the water spreads/stored upto 150m from the check dam location. Hence, *"Length of water spread area" is 150 m.*
4. Total number of days in a year during which there is at least minimum amount of water store in the check dam. For example, if visible amount of water is available in the check dam for 70 days, then *"Number of days water available in a year"* is 70 days.
5. Maximum area of water spread is the surface area of water spread behind the check dam. It is calculated by multiplying *"Width of the stream"* and *"Length of the water spread area".* Hence *"Maximum area of water spread" is 750 m². (*150m X 5m = 750 m²).
6. Water stored in the check dam provides irrigation to 7 ha of arable land. Hence, "*Expected area check dam will provide irrigation" is 7 ha.*
7. In this example, 5 households own the 7 ha of land that is receiving irrigation from check dam. Hence, *"Number of beneficiary households"* is 5
8. Same approach applies to earthen and cement concrete (CC) check dam.

J. Storage

1. Community Water Harvesting Ponds (Renovation/Repair/Construction)	
Work Type	**Renovation of Community Water Harvesting Ponds for Community**
Input Indicator 1	Infiltration Rate (mm/hour)
Input Indicator 2	Additional water storage created (m³)
Input Indicator 3	Number of days water is retained in a year
Input Indicator 4	Maximum area of water spread (m²)
Input Indicator 5	Length/Radius of community pond (m)
Input Indicator 6	Width of community pond (m)
Input Indicator 7	Depth of community pond (m)
Input Indicator 8	Is storage used for irrigation? [Yes/No]
Input Indicator 9	Expected Area water harvesting pond will provide irrigation(ha)
Input Indicator 10	Additional number of beneficiary households

Infiltration rate: This is the rate at which water penetrates the soil surface. Unit of measurement is in millimetres per hour (mm/hour).

Additional water storage created (m3): This refers to the additional storage created i.e. new capacity of pond minus capacity of the pond before renovation.

Number of days water is retained in a year: The number of days that harvesting pond is expected to retain water in a year.

Maximum area of water spread: The extent of the water surface area covered by the pond at its full storage capacity. Unit of measurement is square meter (m^2).

Length/Radius of community pond (m): The length of the pond or the radius of the pond is in circular shape. Unit of measurement is meter (m).

Width of community pond (m): This refers to the width of the pond if it is rectangular. Unit of measurement is meter (m).

Depth of community pond (m): This refers to the depth of the pond or average depth. Unit of measurement is meter (m).

Is storage used for irrigation? [Yes/No]: Select: Yes, if the stored water in the pond is used for irrigation.

Expected area pond will provide irrigation: Maximum area that is expected to receive irrigation from the pond. It indicates the extent of agricultural land that can be irrigated using the water stored by the pond. Unit of measurement is in hectare (ha).

Additional number of beneficiary households: This refers to the additional number of households that benefit from renovation.

K. Recharge

1. *Mini Percolation Tank*	
Work Type	**Construction of Mini Percolation Tank for Community**
Input Indicator 1	Infiltration rate (mm/hr)
Input Indicator 2	Average number of days water retained in a year
Input Indicator 3	Length of tank (m)
Input Indicator 4	Width of Tank (m)
Input Indicator 5	Maximum area of water spread (m^2)
Input Indicator 6	Depth of Tank (m)
Input Indicator 7	Surface water storage created (m^3)

Infiltration rate: It measures the speed at which water is entering into the soil. It is measured by the depth of the water layer that can enter in the soil in an hour. Unit of measurement is millimetres/hour (mm/hour).
Number of days water is retained in a year: The number of days the tank will retain water in a year.
Length of Tank: Measurement of the tank from one end to the other at the longer side. Unit of measurement is in meters.
Width of Tank: Measurement of the tank from side to side, typically perpendicular to the length. Unit of measurement is in meters.
Maximum area of water spread: The maximum area that floodwater expected to cover within a given water storage. Unit of measurement is square meters (m^2).
Depth of Tank: Measurement of depth of tank is typically measured from the top surface to the bottom. Unit of Measurement is in meters.
Surface water storage created: Total water storage created in the percolation tank. Unit of measurement in cubic meters (m^3).

Work Type	Construction of Sand Filter for Borewell Recharge for Community
2. Sand Filter for Open well or Borewell	
Input Indicator 1	Shape of Sand filter
Input Indicator 2	Length of Pit (m)
Input Indicator 3	Width of Pit (m)
Input Indicator 4	Radius {if sand filter is circular}
Input Indicator 5	Depth of Pit (m)
Input Indicator 6	Number of rainy days in a year

Shape of Sand filter: The indicator mentions the shape of sand filter (is it Circular or Rectangular).
Length of Pit: The length of pit refers to the distance from one end of the pit to the other end. Unit of measurement is in meters (m).
Width of Pit: The width would determine the capacity of the filter and amount of water it can process. Unit of measurement is in meters (m).
Radius {if sand filter is circular}: If the sand filter is circular in shape, the radius refers to the distance from the centre of the circle to its outer edge.
Number of rainy days in a year: This is the average number of days in a year when rainfall takes place.

3. Recharge Pits

Work Type	Construction of Recharge Pits for Individual/Community
Input Indicator 1	Shape of Recharge Pit (Circular/Rectangular)
Input Indicator 2	Length of Pit
Input Indicator 3	Width of Pit
Input Indicator 4	Depth of Pit
Input Indicator 5	Radius {If recharge pit is circular}
Input Indicator 6	Number of rainy days in a year
Input Indicator 7	Infiltration rate

Shape of recharge pit: Whether the recharge pit is Circular or Rectangular?

Length of Pit: The length of pit refers to the distance from one end of the pit to the other end. Unit of measurement is in meters (m).

Width of Pit: The width would determine the capacity of the filter and amount of water it can process. Unit of measurement is in meters (m).

Depth Pit: The vertical distance from the top opening of the pit to the bottom of the pit. Unit of measurement is in meters (m).

Radius {if recharge pit is circular}: If the recharge pit is circular in shape, the radius refers to the distance from the centre of the circle to its outer edge.

Number of rainy days in a year: The average number of days pyear water is expected to be available in a year.

Infiltration Rate: It measures the speed at which water is entering into the soil. It is measured by the depth of the water layer that can enter in the soil in an hour. Unit of measurement is millimetres/hour (mm/hour).

L. Storage / recharge (Rainwater harvesting structures)

1. Storage / recharge	
Work Type	**Roof top rainwater harvesting structures in govt./panchayat building**
Input Indicator 1	Water is stored or recharged. (Options: Storage or recharge)
Input Indicator 2	Volume of rainwater storage tank (m^3)
Input Indicator 3	Surface area of the roof top
Input Indicator 4	Average annual rainfall (mm)

Volume of rainwater storage tank: Volume/capacity of the storage tank in which the rainwater from the roof top is collected. _Unit of measurement is millimetres/hour (m^3)._
Surface area of the roof top from which rainwater is collected: Surface area of roof top from which rainwater is collected and recharged. _Unit of measurement is meter square (m^2)._
Average annual rainfall (mm): Amount of rainfall the region receives during a year. _Unit of measurement is milli meters (mm)._

M. Grey Water

1. Grey water (Soak pits / Soakage channel / stabilization pond)	
Work Type	**Construction of Soakage channel / Soak pits / Stabilization pond**
Input Indicator 1	Number of beneficiary households

Number of beneficiary households: Number of households connected to the soak pits / soakage channel / stabilization ponds are the beneficiaries.

N. Compost / nutrients

1. Compost / Nutrients (Compost pit / Vermicompost / NADEP / Berkeley compost)	
Work Type	Construction / repair and maintenance of compost pit / vermicompost structure / NADEP structure / Berkeley compost / Bio-manure pits
Input Indicator 1	Length of pit (m)
Input Indicator 2	Width of pit (m)
Input Indicator 3	Depth of pit (m)
Input Indicator 4	Number of beneficiary households

Length of pit (m): Length of the pit / structure in which the compost is prepared. *Unit of measurement is meters (m).*

Width of pit (m): Width of the pit / structure in which the compost is prepared. *Unit of measurement is meters (m).*

Depth of pit (m): Depth of the pit / structure in which the compost is prepared. *Unit of measurement is meters (m).*

Number of beneficiary households: Number of households using the compost for improving the soil health and fertility of their land.

2. Compost / Nutrients (Azolla pit)	
Work Type	Construction / repair and maintenance of infrastructure for Azolla cultivation
Input Indicator 1	Length of pit (m)
Input Indicator 2	Width of pit (m)
Input Indicator 3	Depth of pit (m)
Input Indicator 4	Number of livestock benefitted
Input Indicator 5	Number of beneficiary households

Length of pit (m): Length of the pit / structure in which the compost is prepared. *Unit of measurement is meters (m).*

Width of pit (m): Width of the pit / structure in which the compost is prepared. *Unit of measurement is meters (m).*

Depth of pit (m): Depth of the pit / structure in which the compost is prepared. *Unit of measurement is meters (m).*

Number of livestock households: Number of livestock benefitted by consuming the azolla prepared from the pits.

Number of beneficiary households: Number of households owning the livestock are the beneficiary households.

O. Nursery

4. Nursery	
Work Type	**Raising of nursery for Individuals / groups / communities**
Input Indicator 1	Number of saplings raised

Number of saplings raised: Total number of saplings raised in nursery for planting in the region

P. Tree Plantation

1. Tree plantation (line plantation)	
Work Type	**Line plantation (boundary / coastal / wasteland / canal / road side) line plantation of trees (horticulture / farm forestry / forestry / shelter belt trees)**
Input Indicator 1	Number of plants
Input Indicator 2	Total length of plantation (m)
Input Indicator 3	Type of plant / trees (Option to select multiple tree species in the give tree list)
Input Indicator 4	1. Number of plants/trees (tree species 1) 2. Number of plants/trees (tree species 2) 3. . 4. . 5. . 6. n (n = number of tree species selected in "Input Indicator 3")

Number of plants: Total number of plants/trees planted per asset id
Total length of plantation (m): Total length of the road line / coastal line / boundary line / wasteland line / canal line on which all the trees are planted. *Unit of measurement is meters (m).*
Type of plant / trees: The user is given list of 60 species. User selects all the species planted.
Number of plants / trees: For the tree species selected, user need to enter how many plant/trees planted for each species type.

2. Tree plantation (Block plantation)	
Work Type	**Block plantation (wasteland / coastal area) of trees (horticulture / farm forestry / forestry / shelter belt trees / bio-drainage trees / sericulture trees))**
Input Indicator 1	Number of plants
Input Indicator 2	Total area of plantation (ha)
Input Indicator 3	Type of plant / trees (Option to select multiple tree species in the give tree list)
Input Indicator 4	1. Number of plants/trees (tree species 1) 2. Number of plants/trees (tree species 2) 3. . 4. . 5. n (n = number of tree species selected in "Input Indicator 3")

Number of plants: Total number of plants/trees planted per asset id
Total area of plantation (ha): Total area of the block area (in hectares) on which all the trees are planted. <u>*Unit of measurement is hectares (ha).*</u>
Type of plant / trees: The user is given list of 60 species. User selects all the species planted.
Number of plants / trees: For the tree species selected, user need to enter how many plant/trees planted for each species type.

Q. Fishery

1. Fishery	
Work Type	**Construction / Repair and maintenance of Fisheries pond / Fish drying yards**
Input Indicator 1	Number of beneficiary households

Number of beneficiary households: Number of households benefitting from the fishery ponds and fishery drying yards.