DISTRICT IRRIGATION PLAN

SONITPUR, ASSAM

NABCONS

NABARD CONSULTANCY SERVICES

District Irrigation Plan, 2016-2020

Sonitpur, Assam

NABARD CONSULTANCY SERVICES PVT. LTD.

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PRADHAN MANTHRI KRISHI SINCHAYEE YOJANA (PMKSY) PROGRAMME OF SONITPUR DISTRICT

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Sri Ranjit Dutta, Hon'ble Minister for Irrigation, Assam,
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Foreword

The Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was launched by Government of India in 2015-16 to complete the irrigation projects on priority with the motto 'Har Khet Ko Pani' and cover all agriculture farms in the country to produce" Per drop more crop"..The PMKSY is intended to be implemented in area development mode for which each state has to draw it's own irrigation development plans based on District Irrigation Plans(DIPs) and State Irrigation Plans(SIPs) with a horizon of 5-7 years.

As per the PMKSY guidelines, the DIP has been prepared for the Sonitpur district involving several departments i.e. Irrigation, Agriculture and Soil Conservation. Prior to formulation of the DIP, proposals for inclusion of schemes under PMKSY components i.e AIBP, Har Khet Ko Pani,Per Drop More Crop and Watershed including renovation of defunct schemes etc were identified by need based assessment and survey by the departmental officials and the targeted beneficiary groups in the villages of all the development blocks. The Block Irrigation plans were finalized by the block level committee constituted for each of the 14 developmental blocks in the district by conducting meetings, duly attended by the departmental officers, BDOs and the PRI representatives. The BIPs form the basis of the District Irrigation Plan with an implementation schedule of 2016-21.

The DIP aims to create an Irrigation Potential of 115630.50 Hectares (AIBP- 16640 Ha, Har Khet Ko Pani- 55909 Ha, Per Drop More Crop- 23705.50 Ha, and Watershed -19385 Ha) of the total 165129 Hectares of cultivable area in the district at an estimated cost of Rs 1873.26 crore.

The PMKSY components as contemplated in the DIP are targeted to create an irrigation potential, nearly 70% of the total available CCA in the district, which would boost up the agriculture production of the district in particular and the state in general.

(Ashitakhya Chakraborty, ACS)
Deputy Commissioner
Biswanath

(Manoj Kr. Deka, IAS)
Deputy Commissioner
Sonitpur

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Executive Summary

In an agrarian economy like India, agriculture utilizes the major share of country's exploitable water resources. Though the sector utilizes the maximum share of exploitable water resources, availability of the same at different locations to different extent makes it vital to adopt effective utilization of water through storage, channelizing and judicial use. At some places like Punjab and Haryana, the environmental and socio-economic rationale for this capture by the sector is now being questioned. Accordingly, it is needed to challenge and change the fundamentals of the prevailing view of water resources exploitation. A new and more suitable approach to water resources allocation is necessary if the population is to be adequately fed, without further degradation and destruction of the critical ecosystem services. Water productivity needs to be enhanced considerably, and economic cost-benefit analysis and pricing regimes can play a significant role in such a process. However, these economic measures will not be sufficient on their own. They will need to be buttressed by technological innovation and institutional changes in order to encourage a more equitable distribution of resources and to mitigate potential international conflicts across 'shared' water basins.

Water has unique characteristics that determine both its allocation and use as a resource by agriculture. Agricultural use of water for irrigation is itself contingent on land resources. In a situation of growing water scarcity and rising demands for non-agricultural (household and industrial) use of water, reassessment of sectoral allocations of water are inevitable. In developing countries, irrigated agriculture plays a vital role in contributing towards domestic food security and poverty alleviation. Therefore, achievement of these objectives is dependent on adequate allocations of water to agriculture. Justification of such allocations requires that irrigated agriculture be a cost-effective means of achieving stated political or social objectives, such as food security or poverty alleviation, and that all externalities be taken into account in the pricing mechanism. Improved allocation of irrigation water is required within the agriculture sectors in order to achieve greater efficiency in the use of irrigation water and existing irrigation infrastructure. Reallocation is also required in order to reduce waterlogging and salinization of irrigated land, to decrease the negative environmental impacts and other externalities of irrigation (caused by over extraction of groundwater and depletion and pollution of surface water).

Government of India launched Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) to address the constraints in providing assured irrigation as well as increasing efficiency and

productivity of current water use to bring more prosperity to the rural areas. Priorities of Government of India were reflected in the Hon'ble President's address to the joint Session of the Parliament of 16th Lok Sabha where he indicated that "Each drop of water is precious. Government is committed to giving high priority to water security. It will complete the long pending irrigation projects on priority and launch the 'Pradhan Mantri Krishi Sinchayee Yojana' with the motto of 'Har Khet Ko Pani'. There is a need for seriously considering all options including linking of rivers, where feasible; for ensuring optimal use of our water resources to prevent the recurrence of floods and drought. By harnessing rain water through 'Jal Sanchay' and 'Jal Sinchan', we will nurture water conservation and ground water recharge. Micro irrigation will be popularised to ensure 'Per drop-More crop".

PMKSY has been approved with an indicative outlay of Rs.50,000 crore over a period of five years from 2015-16 to 2019-20. The programme is an amalgamation of on-going schemes of Ministry of Water Resources, River Development and Ganga Rejuvenation, Ministry of Agriculture & Cooperation and Ministry of Rural Development. The existing schemes AIBP, CADWM, MI, SWMA, Watershed& Convergence with MGNREGA were brought together under the umbrella program of PMKSY. Further the scheme seeks convergence with scheme like Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNRES), Rashtriya Krishi Vikas Yojana (RKVY), Jawaharlal Nehru National Solar Mission and Rural Electrification programmes (JLNNSM&REP), Rural Infrastructure Development Fund (RIDF), Members of Parliament Local Area Development Scheme (MPLAD), Members of Legislative Assembly Local Area Development Fund (MLALAD), Local Body Funds (LBF), Working Plan of State Forest Department (WPSFD) etc. The PMKSY will be implemented in an area development mode only by adopting a decentralized state level planning and projectised execution structure that will allow the state to draw up their own irrigation development plans based on DIPs and SIPs with a horizon of 5-7 years. The program will be supervised and coordinated utilizing the existing mechanism and structure available under Rashtriya Krishi Vikas Yojana (RKVY) program with state agriculture department acting as the State Nodal Agency for implementation of PMKSY. However, the implementing departments for the four components like AIBP, PMKSY (Har Khet Ko Pani), PMKSY (Per drop more crop) and PMKSY (watershed development) will be decided by the respective program ministry/department.

The five chapters along with introduction chapter, explains the profile of district, its water requirement for agriculture and allied sector, water availability, assessment of water

requirement for various sectors and strategic action plan for augmentation and effective management of available water resources.

District Demography:

As per 2011 census, the population of the district is 19,24,110 which is 6.17% of the state's population. With a population density of 370 person per square kilometer, Sonitpur is relatively less densedcompared to the population density of the state (398 person per square kilometer). The number of males and females in the district are 9,83,904 and 9,40,206 respectively forming a sex ratio of 956 female per 1000 male. Compared to the population recorded in 2001 census, there was an increase of 15.55 percent in the population in 2011. The literacy rate of the district is 67.34% which is relatively lower compared to the average literacy rate of the state which stood at 72.19%. There are 3,92,919 households in the district.

Agriculture in Sonitpur:

The economy of the district centers around agriculture and paddy is the predominant commodity that is cultivated three times a year (winter, summer and autumn). The other important crops of the district are pulses, oilseeds, sugarcane, mustard, vegetables, potato, sugarcane, fruits etc. Almost all horticultural crops like fruits, spices, potato and major Rabi and Kharif vegetables are grown extensively and the district produces surplus vegetables.

District Water Profile:

The net ground water availability in Sonitpur District as per latest report of CGWB is 177627 Hect. The existing gross ground water draft for irrigation is 6585 Ha-m and overall draft is 10465 ha-m.Future provision for domestic and Industrial use is 4741 Ha-m and for Irrigation use is 166301 ha-m. In Sonitpur district stage of ground water development is 6%, which shows under the SAFE category.

Demand for water and the gap:

Total present water requirement for the district is 517.85 MCM while the total future water requirement for the district is 771.066 MCM. In present, maximum water demand is for Dhekiajuli block which is 62.81 MCM while minimum is for Rangapara block which is 16.01 MCM.In projected future, maximum water demand is for Behali block which is 140.6 MCM while minimum is for Rangapara block which is 19.30 MCM.The water budget clearlyshows

the water gap of 0.365 BCM in present and of 0.611 BCM in future betweenthe water availability and requirement**.**

PMKSY Financial Proposal:

Total plan of Sonitpur district for four years works out to be Rs. 187326.8 lakh. Maximum share of Rs. 166878.14 lakh (89.08%) is for Irrigation department followed by Agriculture department with Rs. 17886.2 lakh (9.55%) and Soil Conservation department with Rs. 2562.54 lakh (1.37%). The total plan of four years is equally divided in to 4 years i.e. 2016-17, 2017-18, 2018-19 and 2019-20.

Expected Outcome:

The gross irrigated area in the district is 74174 hectare which is around 29.44% of 251721 hectare of the gross cropped area. Agriculture, Irrigation and Soil Conservation departments of the district have proposed to bring additional 115639.5 hectares of land under irrigated cultivation system.

Introduction

Background

Preparation of decentralized area specific district planning process visualized in various plans took concrete shape through the years and initiatives like specific guidelines on methodologies and processes for preparation of district plans; framework for preparation of perspective plan, medium term and annual plans by then planning commission in 1969 and the 73rd and 74th constitutional amendments conferring constitutional status to Panchayats at district and sub district level; local self-government in urban areas; constitution of district planning committee to consolidate the plans prepared at Panchayats and municipalities and prepare a draft development plan for the whole district.

The decentralized planning process was further strengthened through emphasis by planning commission on preparation of district level plans and making it an integral part of the process of preparation of the states 11th five year plan. The Planning commission issued guidelines in August 2006 for preparation of the district plans. The guidelines define the District Planning as 'the process of preparing an integrated plan for the local government sector in a district taking into account the resources (natural, human and financial) available and covering the sectoral activities and schemes assigned to the district level and below and those implemented through local governments in a state. The document that embodies this statement of resources and their allocation for various purposes is known as the District Plan".

Government of India through a resolution in National Development Council on 29th May 2007 conceived a special Additional Central Assistance Scheme (ACAS) to address the slow growth of agriculture and allied sectors by incentivizing states to draw up plans for their agriculture sectors more comprehensively. The NDC resolution states "GoI will introduce a new Additional Central Assistance Scheme to incentivize states to draw up plans for their agriculture sector more comprehensively, taking agro-climatic conditions, natural resource issues and technology into account, and integrating livestock, poultry and fisheries, etc. This will involve a new scheme for Additional Central Assistance (ACA) to State Plans, administered by the Union Ministry of Agriculture over and above its existing Centrally Sponsored Schemes, to supplement the State-specific strategies including special schemes for beneficiaries of land reforms. The newly created National Rainfed Area Authority will, on

request, assist States in planning for rainfed areas".

The NDC in its resolution advised the states to prepare a comprehensive district agriculture plans (C-DAP) that will fully utilize available resources and will include allied agriculture sectors. Further, GOI issued a manual on preparation of comprehensive district agriculture plans to help the states prepare C-DAP. As per these guidelines, the objective of district planning is 'to design an integrated and participatory action plan for the development of local area in general and agriculture and allied sectors in particular'. The objectives of Comprehensive District Agriculture Plan (C-DAP) are:

- To prepare a Comprehensive District Agriculture Plan (C-DAP) through participatory process involving various organisations and stakeholders.
- To enable optimum utilisation of scarce natural, physical & financial resources.
- To assess and plan for the infrastructure required to support the agriculture development.
- To establish linkages with the required institutional support services, like credit, technology transfer, ICT, research etc.
- To evolve an action plan for achieving sustainable agricultural growth with food security and cropping system that will improve farmers' income.

The guidelines required the state/district authorities to (i) ensure that the agricultural plans are prepared for the district and then integrated into the agricultural plans of the State based on the agro-climatic conditions, availability of technology, trained manpower and natural resources; (ii) local needs / crops / feed and fodder / animal husbandry / dairying / fisheries / priorities are reflected in the plan; (iii) productivity gaps for important crops and livestock and fisheries are reduced; and (iv) the returns to the farmers from these are maximized.

The latest move in the process of strengthening of decentralized planning process was the Government of India guidelines issued in 2015 in the form of a template for the preparation of District Irrigation Plan (DIP) and State Irrigation Plan (SIP) as part of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) program and made the preparation of DIP and SIP mandatory for the states to receive funds from the program. The present report is a product of these long drawn efforts of Government of India to strengthen the decentralized planning process in the country focusing on the vital resource i.e., water.

Water is of vital importance for human & animal life, maintenance of ecological balance and promotion of developmental activities. Considering its vital importance and ever increasing

demand for water, in the face of population growth, urbanization & industrialization and considerations of climatic change, making water, an increasingly a scarce resource, available to multiple uses, planning and management of this vital resources, utilization of water economically, optimally and equitably assumes greater importance.

According to the 12th Five year Plan the water budget estimates of India by Ministry of Water Resources suggests an availability of 1123 billion cubic meters (BCM) against a current estimated demand of 710 BCM. The Standing Committee of the Ministry of Water Resources estimates that this water demand will rise to 1093 BCM by 2025. Though the existing water availability in the immediate future seems to be adequate, with the near constant supply of water resources in the face of increasing demand on account of population growth, urbanisation and industrialization will strain the water supply-demand balance.

The per capita water availability which stood at 5,177 cubic meters in 1951 was reduced to 1820 cubic meters in 2001 while the international prescribed limit is 1800 cubic meters. The projected per capita availability of water is 1341 cubic meters in 2025 and 1140 cubic meters in 2050 suggesting shortage of water in the medium term[1]. Further, the all India water balance estimates does not reflect the variations in water balance across time and space-certain areas having a positive water balance and the others facing acute shortage. The problem is further accentuated by water quality related issues.

With the abundant surface and ground water supply in the first five decades since independence, more than 80 percent of the total available water resources were allocated for irrigation purposes and the rest meeting the domestic and industrial demands. In a recent study[2]on the demand for water from agriculture, domestic and industrial uses in 2000, 2025 and 2050 seems to suggest that domestic demand (34 BCM in 2000, 66 BCM in 2025 and 101 BCM in 2050) and industrial demand (42 BCM in 2000, 92 BCM in 2025 and 161 BCM in 2050) for water will utilize the total balance water available while agriculture demand for water will be (605 BCM in 2000, 675 BCM in 2025 and 637 BCM in 2050). This change is partly because of the changing sectoral contributions of India's GDP and also partly because of dynamics of irrigation development in the country where the initial expansion in area under irrigation is propelled by the availability of abundant water resources and availability

[1]Ministry of Water Resources (2011), Strategic Plan for Ministry of Water Resources, GoI, New Delhi
[2]Amarasinghe, U.A., Shah T., Turral, H. and Anand, B.K. 2007. *India's water future to 2025-2050:Business-as-usual scenario and deviations*. Research Report 123, International Water Management Institute, Colombo.

of good quality land. This is no longer the case in many of the states where the availability of land and water are serious constraints for further expansion of irrigation. Further, as per the erstwhile planning commission up to March 2012 out of 141 million hectares of net sown area in the country 114 (or 81%) million hectares is Irrigation Potential Created (IPC) and 88 (or 62%) million hectares is Irrigation Potential Utilised (IPU) leaving almost 20% of irrigated potential unutilized. This leaves 40 percent of the net sown area in the country dependent on rainfall which makes farming a high risk and less productive.

The competing demands for water resources and the emerging issues and concerns were to be addressed through certain basic principles and commonality in approaches in dealing with planning, development and management of water resources[3] under an Integrated Water Resource Management framework. The main objectives of water resource management as delineated in National Water Policy 2012 are:

a) Planning, development and management of water resources need to be governed by common integrated perspective considering local, regional, State and national context, having an environmentally sound basis, keeping in view the human, social and economic needs.
b) Principle of equity and social justice must inform use and allocation of water.
c) Good governance through transparent informed decision making is crucial to the objectives of equity, social justice and sustainability. Meaningful intensive participation, transparency and accountability should guide decision making and regulation of water resources.
d) Water needs to be managed as a common pool community resource held, by the state, under public trust doctrine to achieve food security, support livelihood, and ensure equitable and sustainable development for all.
e) Water is essential for sustenance of eco-system, and therefore, minimum ecological needs should be given due consideration.
f) Safe Water for drinking and sanitation should be considered as pre-emptive needs, followed by high priority allocation for other basic domestic needs (including needs of animals), achieving food security, supporting sustenance agriculture and minimum eco-system needs. Available water, after meeting the above needs, should be allocated in a manner to promote its conservation and efficient use.

[3]Ministry of Water Resources, National Water Policy, 2012, GoI, New Delhi.

g) All the elements of the water cycle, i.e., evapo-transpiration, precipitation, runoff, river, lakes, soil moisture, and ground water, sea, etc., are interdependent and the basic hydrological unit is the river basin, which should be considered as the basic hydrological unit for planning.

h) Given the limits on enhancing the availability of utilizable water resources and increased variability in supplies due to climate change, meeting the future needs will depend more on demand management, and hence, this needs to be given priority, especially through (a) evolving an agricultural system which economizes on water use and maximizes value from water, and (b) bringing in maximum efficiency in use of water and avoiding wastages.

i) Water quality and quantity are interlinked and need to be managed in an integrated manner, consistent with broader environmental management approaches inter-alia including the use of economic incentives and penalties to reduce pollution and wastage.

j) The impact of climate change on water resources availability must be factored into water management related decisions. Water using activities need to be regulated keeping in mind the local geo climatic and hydrological situation.

Government of India launched Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) to address the constraints in providing assured irrigation as well as increasing efficiency and productivity of current water use to bring more prosperity to the rural areas. Priorities of Government of India were reflected in the Hon'ble President's address to the joint Session of the Parliament of 16th Lok Sabha where he indicated that "***Each drop of water is precious. Government is committed to giving high priority to water security. It will complete the long pending irrigation projects on priority and launch the 'Pradhan Mantri Krishi Sinchayee Yojana' with the motto of 'Har Khet Ko Pani'. There is a need for seriously considering all options including linking of rivers, where feasible; for ensuring optimal use of our water resources to prevent the recurrence of floods and drought. By harnessing rain water through 'Jal Sanchay' and 'Jal Sinchan', we will nurture water conservation and ground water recharge. Micro irrigation will be popularised to ensure 'Per drop-More crop***".

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The funds under this program would be provided to the states as per the pattern of assistance of Centrally Sponsored Schemes (CSS) decided by the Ministry of Finance and NITI Aayog. During 2015-16 the existing pattern of assistance of ongoing scheme was continued. An outlay of Rs. 50,000 crore has been approved for 2015-20. The financial assistance provided to the state governments from this centrally sponsored scheme is subject to fulfilment of certain conditions.Firstly, a state will become eligible to access PMKSY fund only if it has prepared the District Irrigation Plans (DIP) and State Irrigation Plan (SIP), excepting for the initial year, and the expenditure in water resource development for agriculture sector in the year under consideration is not less than the baseline expenditure, which is defined as the average of the expenditure in irrigation sector irrespective of the department in the state plan in three years prior to the year under consideration. Secondly, States will be given additional weightage for levying charges on water and electricity for irrigation purposes, so as to ensure sustainability of the programme. Thirdly, interstate allocation of PMKSY fund will be decided based on

- Share of percentage of unirrigated area in the state vis-à-vis national average including prominence of areas classified under Desert Development Programme (DDP) and Drought Prone Area Development Programme (DPAP)
- Increase in percentage share of expenditure on water resource development for agriculture sector in State Plan expenditure in the previous year over three years prior to it and
- Improvement in irrigation efficiency in the state.

Vision

The overreaching vision of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) will be to ensure access to some means of protective irrigation to all agricultural farms in the country, to produce 'per drop more crop', thus bringing much desired rural prosperity.

Objective

The objectives of the PMKSY are to:

a) Achieve convergence of investments in irrigation at the field level (preparation of district level and, if required, sub district level water use plans).
b) Enhance the physical access of water on the farm and expand cultivable area under assured irrigation (Har Khet ko Pani),
c) Integration of water source, distribution and its efficient use, to make best use of water through appropriate technologies and practices.
d) Improve on-farm water use efficiency to reduce wastage and increase availability both in duration and extent,
e) Enhance the adoption of precision-irrigation and other water saving technologies (More crop per drop).
f) Enhance recharge of aquifers and introduce sustainable water conservation practices
g) Ensure the integrated development of rainfed areas using the watershed approach towards soil and water conservation, regeneration of ground water, arresting runoff, providing livelihood options and other NRM activities.
h) Promote extension activities relating to water harvesting, water management and crop alignment for farmers and grass root level field functionaries.

i) Explore the feasibility of reusing treated municipal waste water for peri-urban agriculture, and
j) Attract greater private investments in irrigation.

Strategy/approach

To achieve these objectives PMKSY adopted strategies that include

a) Creation of new water sources; repair, restoration and renovation of defunct water sources; construction of water harvesting structures, secondary & micro storage, groundwater development, enhancing potentials of traditional water bodies at village level like Jal Mandir (Gujarat); Khatri, Kuhl (H.P.); Zabo (Nagaland); Eri, Ooranis (T.N.); Dongs (Assam); Katas, Bandhas (Odisha and M.P.) etc.
b) Developing/augmenting distribution network where irrigation sources (both assured and protective) are available or created;
c) Promotion of scientific moisture conservation and run off control measures to improve ground water recharge so as to create opportunities for farmers to access recharged water through shallow tube/dug wells;
d) Promoting efficient water conveyance and field application devices within the farm viz, underground piping system, Drip & Sprinklers, pivots, rain-guns and other application devices etc.;
e) Encouraging community irrigation through registered user groups/farmer producers' organizations/NGOs; and
f) Farmer oriented activities like capacity building, training and exposure visits, demonstrations, farm schools, skill development in efficient water and crop management practices (crop alignment) including large scale awareness on more crop per drop of water through mass media campaign, exhibitions, field days, and extension activities through short animation films etc.

Programme Components

PMKSY has following four components:

1. Accelerated Irrigation Benefit Programme (AIBP)to focus on faster completion of ongoing Major and Medium Irrigation including National Projects.

2. PMKSY (Har Khet ko Pani): This component focuses on-

a) Creation of new water sources through Minor Irrigation (both surface and ground water)
b) Repair, restoration and renovation of water bodies; strengthening carrying capacity of traditional water sources, construction rain water harvesting structures (Jal Sanchay);
c) Command area development, strengthening and creation of distribution network from source to the farm;
d) Ground water development in the areas where it is abundant, so that sink is created to store runoff/ flood water during peak rainy season.
e) Improvement in water management and distribution system for water bodies to take advantage of the available source which is not tapped to its fullest capacity (deriving benefits from low hanging fruits). At least 10% of the command area to be covered under micro/precision irrigation.
f) Diversion of water from source of different location where it is plenty to nearby water scarce areas, lift irrigation from water bodies/rivers at lower elevation to supplement requirements beyond IWMP and MGNREGS irrespective of irrigation command.
g) Creating and rejuvenating traditional water storage systems like Khatri, Kuhl etc. at feasible locations.

3. PMKSY (Per Drop More Crop)

a) Programme management, preparation of State/District Irrigation Plan, approval of annual action plan, Monitoring etc.
b) Promoting efficient water conveyance and precision water application devices like drips, sprinklers, pivots, rain-guns in the farm (Jal Sinchan);
c) Topping up of input cost particularly under civil construction beyond permissible limit (40%), under MGNREGS for activities like lining inlet, outlet, silt traps, distribution system etc.
d) Construction of micro irrigation structures to supplement source creation activities including tube wells and dug wells (in areas where ground water is available and not under semi critical/ critical/ over exploited category of development) which are not supported under AIBP, PMKSY (Har Khet ko Pani), PMKSY (Watershed) and MGNREGS as per Taluka/district irrigation plan.

e) Secondary storage structures at tail end of canal system to store water when available in abundance (rainy season) or from perennial sources like streams for use during dry periods through effective on-farm water management;
f) Water lifting devices like diesel/ electric/ solar pumpsets including water carriage pipes, underground piping system.
g) Extension activities for promotion of scientific moisture conservation and agronomic measures including cropping alignment to maximise use of available water including rainfall and minimise irrigation requirement (Jal Sarankchan);
h) Capacity building, training and awareness campaign including low cost publications, use of pico projectors and low cost films for encouraging potential use water source through technological, agronomic and management practices including community irrigation.
i) The extension workers will be empowered to disseminate relevant technologies under PMKSY only after requisite training is provided to them especially in the area of promotion of scientific moisture conservation and agronomic measures, improved/ innovative distribution system like pipe and box outlet system, etc. Appropriate Domain Experts will act as Master Trainers.
j) Information Communication Technology (ICT) interventions through NeGP-A to be made use in the field of water use efficiency, precision irrigation technologies, on farm water management, crop alignment etc. and also to do intensive monitoring of the Scheme.

4. PMKSY (Watershed Development)

a) Effective management of runoff water and improved soil & moisture conservation activities such as ridge area treatment, drainage line treatment, rain water harvesting, in-situ moisture conservation and other allied activities on watershed basis.
b) Converging with MGNREGS for creation of water source to full potential in identified backward rainfed Talukas including renovation of traditional water bodies

Rationale/ Justification

In reference to the status and need of irrigation, the water resource management including irrigation related priorities was identified for Sonitpur district by the peoples' representatives of district with support from administration and technical experts. For instance the reports of

Strategic Research and Extension Plan (SREP) prepared under ATMA program, Comprehensive District Agriculture Plan (C-DAP) prepared as part of Rashtriya Krishi Vikas Yojana (RKVY), Potential Linked Credit Plans (PLP) of NABARD and the Integrated District Development Plan etc. identified number of irrigation related issues for Sonitpur district including (i) creating irrigation potential through water harvesting structure, Nalla and Check Bundh, Percolation and Recharge tanks (ii) promoting water use efficiency through sprinkler and drip irrigation; (iii) promoting protected polyhouse cultivation to minimize risk factors and enhance quality and productivity; (iv) Improvement of on-farm water delivery and efficiency of existing irrigation systems; (v) promotion of soil conservation of arable & non-arable land through engineering measures; (vi) increase the forest cover in the district and (vii) land improvement measures.

Methodology

During the course of preparation of District Irrigation Plan (DIP) the team visited Sonitpur district to collect data and have interaction with all the stakeholders. Methodology adopted to prepare DIP is outlined in brief as under:

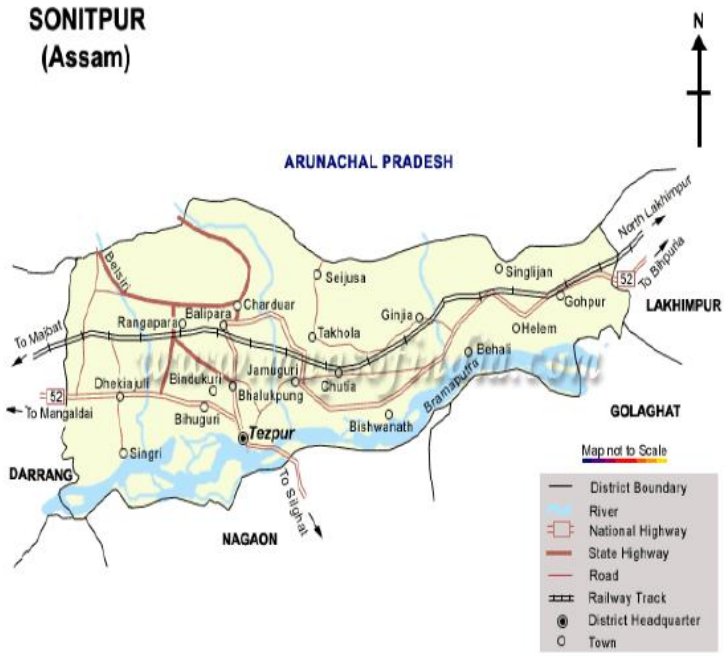
a) Collection of primary and secondary data from field from various sources including published documents and websites.
b) Various meetings were held to obtain ground level realities and data from key personnel/stakeholders through structured, unstructured interviews, focused group discussions etc.
c) Meetings with various State Government departments and related institutions were held
d) Meeting was also held with State Level authorities.
e) GIS maps of the areas/clusters were studied to understand the land morphology, topography of the district.
f) Focused group discussions and interaction with agriculture officers, horticulture officers, soil conservation officers, extension officers, rural development department, animal husbandry department, irrigation officers both at Talukas anddistrict level for identifying the key issues and focus areas of the region.
g) Discussion with NABARD officer of the district was also held during the visit.

On the basis of detailed discussion and analysis of data, the team arrived at the projections of various components of PMKSY and Department wise plan for four years from 2016-17 to 2019-20 as detailed in the plan.

Chapter 1 : General Information of the District

1.1 District Profile

The Sonitpur district is located in the North Bank Plain agro-climatic zone of the state of Assam. The district is bounded by Arunachal Pradesh on the North, the Brahmaputra River on the south, Lakhimpur and Darrang district of Assam to the east and west respectively. The district lies in between 26º28' to 27º08' North Latitude and 92º19' to 93º47' East Longitude. The geographical area of the district is 5.32 lakh hectares which is 6.78% of the total area of the state.



Map 1-1: District map of Sonitpur

Table 1-1: District Profile

Name of the District	District Code	Latitude	Longitude
Sonitpur	AS12	26º28' to 27º08' North	92º19' to 93º47' East

Source: Census of India 2011, Sonitpur

The economy of the district is primarily agriculture based with approximately 80% of its population dependent directly or indirectly on agriculture and allied activities. Rainfed cultivation of Paddy (single crop) continues to be prevalent in the district. However, with the introduction of HYV, expansion of area under irrigation, farm mechanisation etc., multicropping is gradually gaining popularity. Three types of seasonal rice are grown in the district viz., Ahu (autumn rice), Sali (winter rice) and Boro (summer rice). Tea, Jute, Sugarcane, Mustard, Potato, Pineapple, Banana, Coconut, Arecanut etc. Are the other major

crops. Piggery, Poultry, Dairy, Fishery, Sericulture are important allied activities in the district. Various Small Scale Industries, Tiny and Village Industries including handloom and handicrafts, rice and flour mills, oil mills, engineering industries, stone crushers, brick kilns etc. Are found in large numbers in the district. A good number of Self Help Groups (SHGs) are evolving as micro enterprises in the district.

Administrative Set-up of Sonitpur

With a view to run the administration of the State smoothly, it hasbeen divided into Districts, which in turn have been further sub-divided into development Blocks. The blocks contain large numberof villages and possibly several towns. The villages have Gram Panchayats (G.P.) to run the local administration. A Gram Panchayat may constitute onerevenue village, several revenue villages or a part of a large village. Similarly,the towns have Municipality or Municipal Corporation as of local self-government.

The Sonitpur district was created in 1983 after the split from Darrang. Tezpur town is the Head Quarter of the district. Tezpur can be described as the cultural capital of Assam. Every landscape of Tezpur reflects its rich cultural heritage since time immemorial. The district comprises of three civil/agriculture sub- division viz; Tezpur, Biswanath Chariali and Gohpur. It comprises 7 revenue circles, 14 blocks, 158 G.P. and 1874 revenue villages.

Name of Block	Geographical Area in Ha	No. of G.P.	No. of revenue Villages
Gabharu	23261	8	89
Bihaguri	22281	9	93
Dhekiajuli	63748	18	292
Barcholla	43238	11	102
Balipara	56584	18	214
Rangapara	21107	8	83
Naduwar	41510	10	127
Sootea	38431	10	104
Biswanath	26732	7	87
Sakomatha	25895	8	96
Baghmora	25297	8	85
Behali	26656	9	94
Choiduwar	56428	17	179
Pub Choiduwar	61232	17	231
Total	**532400**	**158**	**1874**

Source: Census of India 2011, Sonitpur

The Deputy Commissioner is the Head of the District administration. The Deputy Commissioner looks after the general administration,maintenance of collection of land revenue and settlement of law relateddisputes, civil supplies, district planning, mid-day meal

scheme etc. at thedistrict level. At the Block level, Block Development Officer (B.D.O.) looks after the land development, revenue collection, civil supplies and law and order. Thefunctions of administration of law and order and control with investigationof crime are done by the Superintendent of Police of the district with thehelp of Police Stations working under him.

The Panchayati Raj institutions are fairly strong and most of thedevelopment works have been transferred to the District Panchayats and itssubordinate bodies. The District Panchayat has an elected President whileDistrict Development Officer appointed by the Government, works as its Secretary, who looks after day-to-day work related to the development.Similarly, at the Block level, Block Panchayats have been constituted which have an elected President. The Taluka Development Officer is placedby the Government and works as Secretary of the Taluka Panchayats andconducts the regular administrative work. Likewise, an elected Presidentheads the Municipality and the Chief Officer works as the Secretary of theMunicipality, who looks after the day-to-day work.There are eight Vidhan Sabha constituencies of this district. All of these are part of Mangaldoi Lok Sabha constituency.

1.2 District Demography

As per 2011 census, the population of the district is 19,24,110 which is 6.17% of the state's population. With a population density of 370 person per square kilometer, Sonitpur is relatively less densedcompared to the population density of the state (398 person per square kilometer). The number of males and females in the district are 9,83,904 and 9,40,206 respectively forming a sex ratio of 956 female per 1000 male. Compared to the population recorded in 2001 census, there was an increase of 15.55 percent in the population in 2011. The literacy rate of the district is 67.34% which is relatively lower compared to the average literacy rate of the state which stood at 72.19%. There are 3,92,919 households in the district.

Table 1-2: Demography of Sonitpur

Name of the blocks	Population			SC		ST		Total	
	M*	F	CH (1-14 yrs)	SC NHH	SC MM	ST NHH	ST MM	NHH	MM
Dhekiajuli	127243	118947	36591	2461	11934	3901	18440	49372	246190
Gabharu	79359	76685	21990	1240	5575	1853	8526	33136	156044
Barchala	100950	96395	35370	2844	13798	8477	40728	38279	197345
Balipara	121319	112601	32766	1512	7002	2754	13222	48744	233920
Rangapara	50561	48351	14249	108	474	875	4139	19638	98912
Bihaguri	44405	42031	11904	1065	4769	6785	34786	17456	86436
Naduar	45940	44971	11350	1805	8060	815	4135	19369	90911
Chatia	63415	61494	18185	1110	5248	2846	13183	25531	124909
Sakomatha	44222	42716	13180	109	608	2788	13354	17784	86938

Biswanath	33016	31812	10396	1241	5930	77	318	13293	64828
Baghmara	44650	43112	13990	515	2320	539	2459	17417	87762
Behali	44775	43176	12609	3000	14884	235	1086	18050	87951
Chaiduar	70661	69191	19423	2580	12540	3848	21590	28237	139852
Pub-Chaiduar	57886	55906	15715	1201	592	8720	53406	21425	113792
Rangpara (TC)	9485	8908	1855	389	1798	235	871	4243	18393
Tezpur (MB)	29993	28566	5149	1539	11909	255	1003	13749	58559
Biswanath Chariali (TC)	9771	9374	1855	175	744	58	203	4454	19145
Gohpur (TC)	6253	5970	1285	212	945	189	758	2742	12223
Total	**983904**	**940206**	**277862**	**23106**	**109130**	**45250**	**232207**	**392919**	**1924110**

Source: Census of India 2011, Sonitpur

*M- Male, F- Female, CH- Children 0-14 years, NHH- No. of households, NM- No. of members, T-Total, R-Rural, U-Urban

Dhekiajuli block has the highest population of 2,46,190 while Biswanath block has the lowest population of 64, 828. In urban population, Tezpur which is the district headquarter has the highest population of 58,559 while Gohpur has the lowest population of 12,223. The following figure shows the number of male, female and children population in the blocks of Sonitpur district.

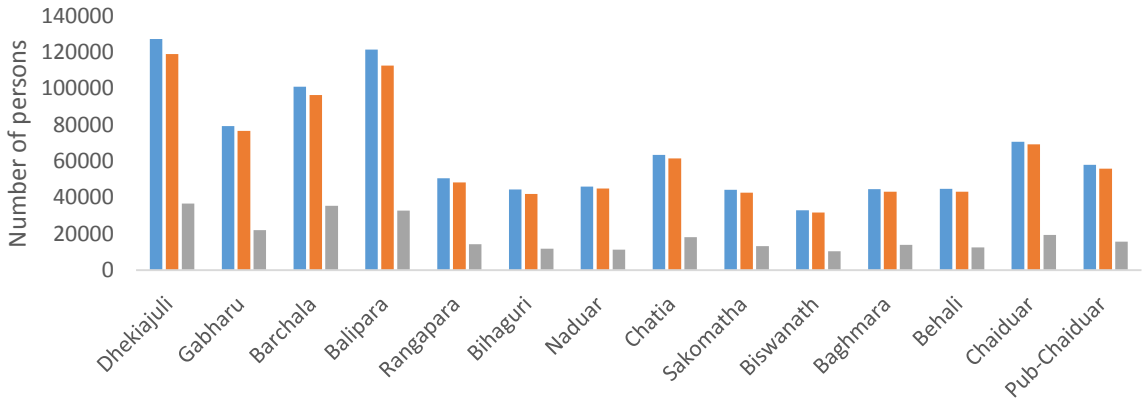


Figure 1-1: Number of Male, Female and Children in blocks of Sonitpur district

Total number of SC households in the district is 23,106 with the total population of 1,09,130. Out of this, Behali block has the highest number of SC population of 14,884 while Rangpara block has the lowest SC population of 474.Total number of ST households in the district is 45,250 with the total population of 2,32,207. Out of this, Pub-chaiduar block has the highest number of SC population of 53,406 while Biswanath block has the lowest SC population of 318.

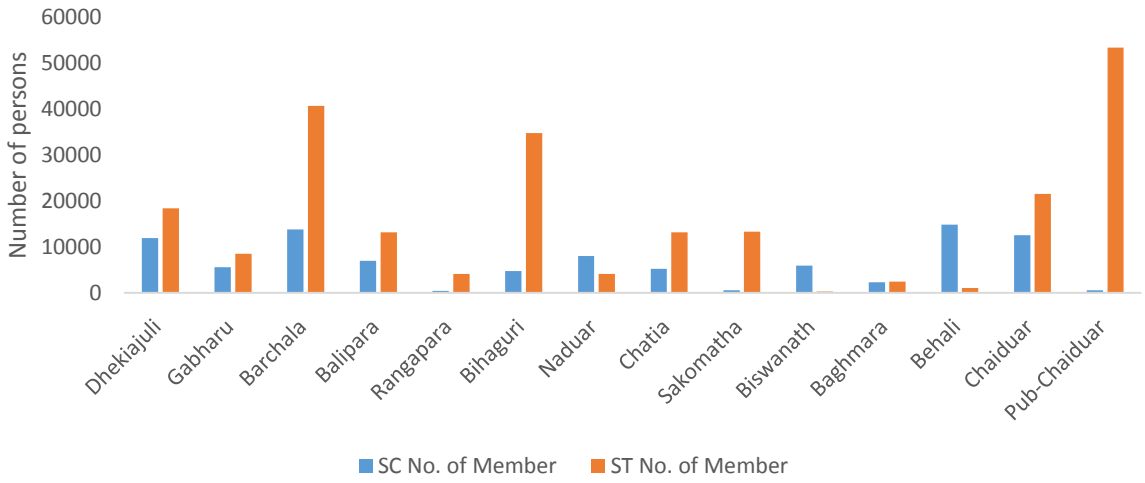


Figure 1-2: Number of SC and ST members in blocks of Sonitpur district

1.3 Biomass and Livestock

Next to Agriculture and Horticulture, Livestock rearing is an important enterprise of the district. Cows, buffaloes, draft animals, goats pigs, poultry/ducks are main commodities of livestock enterprise. Cross breed cows,improved breed buffaloes and upgraded pigs in small numbers are also reared in almost all the blocks of the district. Mostly the local breeds are common. The population of the Large, Small, Milch or meat animals including the draft animals (Buffalos/yak/bulls etc) are given in Table no. 1-3 and 1-4. Poultry rearing is the most predominant sector in the livestock enterprise with 18,31,347 birds in the district. During the last 30 years, milk production has increased more than three times, egg production three and half times, chicken and chevrons more than three times, pork more than three times and beef nearly two times.

Table 1-3: Population of Small and Milch or Meat Animals in Sonitpur

Block	Small Animals					Any other Milch or Meat Animal
	Poultry (Nos.)	Ducks (Nos.)	Pigs (Nos.)	Goats (Nos.)	Sheeps (Nos.)	Rabbit (Nos.)
Borsola	194371	36796	12783	64001	2045	-
Dhekiajuli	283780	46999	17820	74208	2030	55
Bihaguri	104862	26593	7815	54004	1730	-
Gabharu	122860	26890	9428	46970	885	60
Rangapara	112766	22488	9236	40966	681	11
Balipara	117954	24689	9337	43968	783	65
Naduar	72061	27822	7440	43140	786	70
Sootea	61816	12627	5430	32200	766	30
Sakomatha	62901	30070	16901	31050	1740	-
Biswanath	63882	22090	15080	33054	1501	50
Baghmara	62980	25130	18070	34751	1930	-
Behali	63682	27030	13910	30153	-	-

Chaiduar	62564	24122	16920	36652	1462	30
Pubchaiduar	63482	28040	15060	28242	-	7
Total	**1449961**	**381386**	**175230**	**593359**	**16339**	**378**

Table 1-4: Population of Large and Draft Animals in Sonitpur

Block	Large Animals				Draft Animal (Buffalo/yak/bulls/any other (Nos.)		
	Indigenous Cow (Nos.)	Hybrid Cow (Nos.)	In descriptive Buffalo (Nos.)	Hybrid Buffalo (Nos.)	Donkey (Nos.)	Horse (Nos.)	Elephant (Nos.)
Borsola	78809	3001	1655	-	28	-	2
Dhekiajuli	123076	2950	1860	-	16	47	3
Bihaguri	12266	1670	1450	-	-	44	-
Gabharu	118711	3114	4013	-	20	34	-
Rangapara	68918	1793	1603	-	4	9	2
Balipara	76312	2801	3408	-	12	32	2
Naduar	379773	3155	774	-	-	38	4
Sootea	64328	2702	1160	-	-	10	2
Sakomatha	58878	1963	3250	-	-	-	-
Biswanath	64098	2703	3361	-	-	38	2
Baghmara	59813	1998	3952	-	-	-	-
Behali	63131	2699	4263	-	-	4	2
Chaiduar	61743	1899	3652	-	-	42	4
Pubchaiduar	62792	2009	3563	-	-	6	2
Total	**1292648**	**34457**	**37964**	**-**	**80**	**304**	**25**

1.4 Agro-Ecology, Climate, Hydrology and Topography

The climate of the district is sub-tropical in nature with warm and humid summer followed by dry and cool winter. The mean maximum and minimum temperature varies from 28^{o}C to 35^{o}C and 19^{o}C to 20^{o}C respectively. The annual average relative humidity varies in the range of 69.8 – 94%. The average annual rainfall remains between 1365 – 2350 mm and average rainy days in a year lie between 122- 134. Nearly 65 -70% of annual rainfall is received during South –West monsoon period and 20-25% during pre-monsoon period. From the growth and development point of view, all the climatic parameters are not only suitable for growth and development of sub-tropical humid vegetation but also for successful rearing of livestock/birds/fishery etc.

The district is divided into five Agro-Ecological Situations on the basis of land type, topography, climatic conditions and existing farming practices with a view to generate location specific technology to cater the needs of the farming community by Assam Agriculture University, Jorhat. Maximum cultivable area (57.77%) of the district falls under AES -2 and minimum (2.92%) in AES -5.

Table 1-5: Agro-ecology and Topography of Sonitpur district

Agro Ecological Zone Type	Type of Terrain	Normal Annual Rainfall (mm)	Average Monthly Rainfall (mm)	No. of Rainy days (No.)	Maximum rainfall Intensity (mm)		
					Up to 15 min	Beyond 15 but up to 30 Min	Beyond 30 but up to 60 Min
North Bank Plain Zone	Foothills of Himalaya, Central Belt of Old Alluvium, Low lying riverine Belt	2317.7	184.6	122-134	7.5	12.5	20

Table 1-6: Climate and Hydrology of Sonitpur district

Average Weekly Temperature (°C)									Potential Evapo-Transpiration (PET) Cumulative
Period									
Summer (April-May)			Winter (Oct.-Mar.)			Rainy (June-Sept.)			
Min	Max	Mean.	Min	Max	Mean.	Min	Max	Mean.	
19.5	32.5	26	10.5	25.7	18.1	25	35	30	955-1722

1.5 Soil Profile

The soils of the district can broadly be classified into the following groups:

1. **Red Loamy soils**: These are found in the northern border of the district. This soil type develops in the hill slopes under high rainfall condition. This soil is characterized by low nitrogen, low phosphate and medium to high potash. PH is acidic.

2.Lateritic Soil: The lateritic soils are the product of high leaching and found in hilly region. Soil PH is acidic due to intensive leaching of bases and formation of clay minerals and ferric hydroxides. The lateritic soils are characterized by brick red to brownish red colour and poor plant nutrient.

3.New Alluvial Soils: The new alluvial soils are found in the flood plain area and are subjected to occasional floods and consequently receive considerable siltdeposit after the flood recedes. These are yellow to yellowish grey in colour and are admixtures of sand, silt and clay in varying proportions. Mineral weathering and geo-chemical changes are nominal. But incipient changes in the top layer have been noticed due to biological activity. Soil PH is feebly alkaline and moderately rich in plant nutrient.

4.Older Alluvial Soil: It develops at higher levels and practically unaltered alluvium representing a broad spectrum of sand, silt and humus rich claydepending on landform. The soils are comparatively more acidic than the neweralluvial soil and hence more crop sensitive.

Physiography

The soils in the district can be broadly classified into three belts viz. Foothills of the Himalayas, Central belt of old alluvium and low lying riverine belt. The foothill soils are alluvial laterites, which washed down from hilly slopes, mainly are heavy textured soils and suitable for growing of horticulture crops. Soils of Central belt of old alluvium are sandy-loam and silty clay in texture, acidic in reaction and are suitable for paddy cultivation. The low lying riverine belt lies by the side of the Brahmaputra River and formed by the deposits carried out by the river Brahmaputra and its tributaries to form alluvial soil.

Textural Classification of Soils

The texture of Soil in the Low lying riverine belt is generally sandy or loamy sand and in reaction is neutral to slightly acidic. Different rabi crops such as pulses, oil seeds and vegetables are grown in this belt. Soils of the district are mostly alluvial and sandy loam in nature. However, sandy soils exist in riverine area and red soils prevail in foothills of the district. Alluvial and sandy loams constitute 48.5% and 41.1% respectively of the total cultivable area of the district. Sandy soils comprise 8.6 % of the cultivable area.

Problematic and nutrient deficient soils

Normally, pH of most of the soils lie between 5.6- 6.6. In very few cases, it ranges in between 4.5 to 5.5. Around 15,160 Ha of land(9.2% of total cultivable land) is affected by iron toxicity. However, it varies between 1.7% (Behali block) to 26.5% (Rangapara block) across the blocks and 2.5 % area is deficient in micronutrients.

These soils can be corrected by adoption of suitable corrective measures. Soils of all the blocks except Rangapara, Naduar, Biswanath and Sakomatha blocks are high in nitrogen; medium in potash (except Sootea block) and the low in phosphorous (except Borchalla, Rangapara and Sootea blocks). These can be corrected by adoption of suitable corrective measures.

Land Slope Classification

The different type of soil classes according to the land slope showing the area covered in % are given at Table

Table 1-7: Soil Type and Land slope classification of Sonitpur district

Soil Type		Land Slope			
Major Soil Classes	**Area (Ha)**	**0-3% (ha)**	**3-8 % (ha)**	**8-25 % (ha)**	**>25 % (ha)**
Red Soil	2975	875	575	460	1065
Alluvial Soil	80073	25690	35750	11900	6733
Sandy Soil	14175	4325	5421	3545	884
Sandy Loam	67906	15432	35432	7832	9210
Total	**165129**	**46322**	**77178**	**23737**	**17982**

1.6 Soil Erosion and Run-off Status

Soil erosion is a serious problem in Assam especially in the hilly regions and areas in the north bank of the Brahmaputra bordering Bhutan and Arunachal Pradesh. Sheet and river bank erosion of the Brahmaputra and land-slides in the hilly terrains contribute substantially to the sedimentation problem of the rivers and productivity decline of farm land covering lakhs of hectares. The catchment of the Brahmaputra is characterized by very steep hill slopes with coarse soil texture and unstable land mass. This causes high instantaneous run-off and heavy siltation in the tributaries as well as in the channels of main river. It is also frightening that the mighty river is drifting its course now towards southern bank and causing sedimentation in the north bank.

Quantitative information on soil loss in Assam is scanty. Soil loss at Jia Bharati and Puthimari basin was reported to be 47.21 and 28.87 t/ha/yr respectively. Soil erosion in Assam is more of natural causes and is continuing over the years with varying intensities. However, of late, anthropogenic activities like uncontrolled deforestation and unscientific land use have accelerated the process of soil erosion. The main factors responsible for soil erosion in the state may be attributed to - Weak geological formation and active seismicity, High rainfall Intensity and low gradient of the river, Landscape, geology and soil types, shifting cultivation and deforestation.

Based on field observations made during the execution of Soil Resource Mapping programme of the state, the dominant soils of the state were groupedqualitatively into four soil erosion classes.These qualitative assessment indicated that the major area of the state is under moderately eroded class (37.2 % of TGA) followed by slight (28.4%), none to very slight (18.5%) and severe (7.8%).

I. Slight(<5t/ha/yr)

II. Moderately Slight (5- 10 t/ha/yr)

III. Moderate (10-15t/ha/yr)

IV. Moderately Severe (15-20t/ha/yr)

IV. Severe (20-40t/ha/yr)

V. Very Severe (40t/ha/yr)

The soil losses in the district falls mostly in the category-slight, moderately slight and moderate with soil erosion less than 15 t/ha/year.

Conservation measures

A number of state and centrally sponsored projects on watershed management, protection of riverine lands, protective afforestation, land development, gully control works, plantation of cash crops were undertaken. A number of embankments (mostly earthen) have been constructed along the river course to tackle frequent floods. Afforestation has also been undertaken at places along with plantation crops. Through all these short and long term efforts some progress could be achieved to protect the district from soil loss and mitigate the fury of floods to some extent.

Flood affected area

Generally, the district experiences 2-4 waves of floods in between May to September. At present,15686 hectares viz 9.50% of cultivable area of the district is chronically flood affected. It is observed that area of Dhekiajuli, Borchalla, Naduar, Sootea, Gabharu, are affected by the flood severely and the area of the Biswanath, Chaiduar, Pub Chaiduar blocks are affected mildly. The area of the remaining blocks are least affected by the flood. During last 40 years, damage to the livestock was caused during, 1977, 2004 and 2012.

1.7 Land Use pattern

Thetotal geographical area of the district is 5,32,298 Ha out of which 31.03% is cultivable,29.04% is forest,31.02% is under non-agricultural use,2.23% is pasture, 4.12% is barren/waste land, 1.42% under miscellaneous plantation and 0.24% is in pasture. Area under pasture is very negligible and marginally productive due to prevailing system of open grazing since long without adding any nutrient. This area is required to be given special attention for corrective treatment to enhance the productivity. The following table gives the block wise information on land use pattern**.**

Table 1-8: Land use pattern in Sonitpur district

Name of Block	TGA	Area Under Agriculture				Area under Forest (Ha)	Area under Wasteland (Ha)	Area under other uses (Ha)
		GCA	NSA	AST	CI (%)			
Gabharu	23261	14799	7387	7412	200.33	NA	NA	NA
Bihoguri	22281	10731	5859	4872	183.15	NA	NA	NA
Dhekiajuli	63748	34930	21917	13013	159.37	NA	NA	NA
Barchalla	43238	21720	11858	9862	183.17	NA	NA	NA
Balipara	56584	19185	11862	7323	161.73	NA	NA	NA
Rangapara	21107	7639	4044	3595	188.89	NA	NA	NA
Naduar	41510	24080	13761	10307	174.98	NA	NA	NA
Sootea	38431	19175	11113	8062	172.55	NA	NA	NA
Biswanath	26732	12669	8845	3824	143.32	NA	NA	NA
Sakomatha	25895	10121	6801	3320	148.81	NA	NA	NA
Baghmara	25297	12538	6299	6239	199.04	NA	NA	NA
Behali	26656	11864	6727	5137	176.37	NA	NA	NA
Choiduar	56428	21842	15058	6784	145.05	NA	NA	NA
Pub-Choiduar	61232	30426	20336	10090	149.61	NA	NA	NA
Total	**532400**	**251721**	**151867**	**99584**	**165.75**	**154563**	**21935**	**207920**

TGA- Total Geographical Area, GCA- Gross Cropped Area, NSA- Net Sown Area, AST- Area Sown more than once, CI- Cropping Intensity

Land Holding Patterns of the district

There are 2,03,161 farmers in the district of which majority are small and marginal. About 30,491 farmers are landless and 24374 farmers fall into category of Big farmers. The block wise land holding pattern of the district is as follows. Maximum number of farmers are in Dhekiajuli block followed by Choiduar and Pub-choiduar block.

Table 1-9: Number and Type of farmers in Sonitpur district

Block	Big farmer (Nos)	Small farmer (Nos)	Marginal Farmer (Nos)	Landless (Nos)	Total Farmers (Nos.)
Gabharu	1210	3732	3631	1513	10085
Sootea	2191	6756	6573	2741	18261
Naduar	2045	6306	6136	2558	17045
Bihaguri	1509	4653	4528	1888	12578
Dhekiajuli	2866	8837	8598	3584	23885
Borchalla	1876	5784	5628	2346	15634
Balipara	2080	6415	6242	2603	17340
Rangapara	1082	3336	3246	1354	9018
Sakomatha	956	2950	2870	1197	7973
Baghmora	1078	3325	3235	1349	8987
Behali	1296	3998	3890	1622	10806
Biswanath	1017	3136	3051	1272	8476

Choiduar	2715	8373	8146	3396	22630
Pubchoiduar	2453	7563	7359	3068	20443
Total	**24374**	**75164**	**73133**	**30491**	**203161**

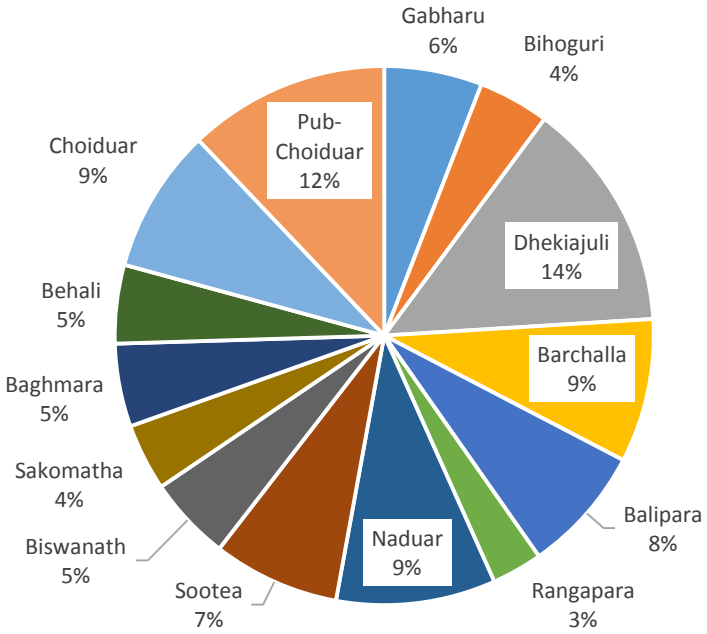


Figure 1-3: Block wise gross cropped area in Sonitpur

Chapter 2 : District Water Profile

Water is vital for survival of both plants and animals. It is the central component of the planet Earth controlling the weather, climate, plant and animal kingdom. It supports agriculture, forestry, navigation, industries and hydroelectricity generation and other uses such as for recreation, water sports activities etc. The importance of water has been recognized all over the world. Water resource development and management practices are given top priorities all over the world to avoid the water crisis in future. This chapter outlines the different type of crops,productivity and irrigation status of the Sonitpur distrct.

2.1 Area wise, Crop wise, irrigation Status

The economy of the district centers around agriculture and paddy is the predominant commodity that is cultivated three times a year (winter, summer and autumn). The other important crops of the district are pulses, oilseeds, sugarcane, mustard, vegetables, potato, sugarcane, fruits etc. The crop wise irrigated and rainfed area sown in different seasons like Kharif, Rabi and Summer in the district for each blockis given in Annexure I.

2.2 Production and Productivity of Major crops

The agro climatic condition of the district is very much conducive for raising all types of crops. Almost all horticultural crops like fruits,spices,potato and major Rabi and Kharif vegetables are grown extensively and the district produces surplus vegetables. Major fruits that are grown successfully are citrus, pineapple, banana and litchi. Potatao is the main tuber crop grown in the district. Ginger, turmeric and black pepper are the major spice crop of the district. The block wise, areawise production and productivity of different types of crops are given in the tabular forms in Annexure II.

2.3 Irrigation based classification

The irrigation potential in the district is developed both from the surface and ground water sources. The irrigation department is responsible for creation of major, medium and minor irrigation schemes. The agriculture department has also created irrigation potential in different cultivable area by way of installation of shallow tube well schemes.Presently, there are 3 (three) working nodal divisions of the irrigation department in the district which work under the administrative control of the Superintending Engineer. Besides the three civil divisions, the electrical and mechanical works are executed by two separate divisions. The agriculture department too has an agri–engineering division which also take up minor irrigation schemes mostly in the form of shallow tube wells. The surface flow and lift

irrigation schemes were constructed mostly in the perennial sources/streams and natural drainage etc. The deep tube wells and shallow tube well irrigation schemes were also constructed to draw underground water to meet the irrigation needs. The irrigation department has so far taken up about 112 schemes of which 25 are surface flow irrigation schemes (FIS), 17 lift irrigation schemes(LIS), 61 deep tube well schemes(DTW), 9 shallow tube well schemes. Presently 39 functional schemes are productive in supplying irrigation water to crop fields. 55 numbers of irrigation schemes are presently in ongoing stage which are targeted to be completed by the end of 2016-17 in which case the total numberoffunctional schemes in the district would be 89.The present status of the irrigation schemes in the district are given below.

Table 2-1: Status of Irrigation schemes in the Sonitpur district upto 2015-16

Category	Total No	Present status (No)			Functional (No)
		Completed	Ongoing	Defunct	
FIS –Major Minor	1 24	16	6	3	15
LIS	17	5	7	5	10
DTW	61	13	42	6	14
STW	9	-	-	9	-
Total	**112**	**34**	**55**	**23**	**39**

The above schemes were taken up under different programme viz., AIBP, TSP, SCSP, NLCPR, ABY, NABARD, OTCA, DDP and state plan.

Table 2-2: Irrigation based classification

Block	Irrigated (Area in Ha)		Rainfed (Area in Ha)	
	Gross Irrigated Area	Net Irrigated Area	Partially Irrigated/Protective Irrigation	Un-Irrigated or Totally Rainfed
Borsola	6574	2606	0	10259
Dhekiajuli	11197	6248	0	17849
Bihaguri	1180	1084	0	5611
Gabharu	5663	2963	0	4950
Balipara	6912	3536	0	9801
Rangapara	2152	1076	0	3547
Naduar	12167	8620	0	6844
Sootea	3936	1768	0	10451
Sakomatha	4020	2690	0	4622
Biswanath	3550	2070	0	7244
Baghmara	4130	2560	0	4263
Behali	3712	1966	0	5273
Chaiduar	2880	1230	0	14813
Pubchaiduar	6101	3740	0	17445
Total	**74174**	**42157**	**0**	**122972**

Source: Agriculture Department, Sonitpur

Chapter 3 : Water Availability in Sonitpur

Water availability is an important issue for ascertaining the demand of water for domestic, livestock, irrigation, industrial and power generation projects. The water availability depends on topography, climatic conditions, rainfall, soil profile, infiltration rate, run off and human activities over the catchment area. The changes in the water levels of the surface source are mainly because of the variations in the inflow from the upper catchments. The fluctuations constitute a sensitive indicator of past and present climate and human activities at a local and regional scale.In the hydrological point of view,the entire Sonitpur district falls under the Brahmaputra basin.

3.1 Status of Water Availability

For creating access to water source either assured or protective to each farmer will require a demand and supply assessment of crop water requirements, effective rainfall and potential source of existing and new water sources considering the geo-hydrological and agro ecological scenario of the block. The master plan will include information on all sources of available water, distribution network, defunct water bodies, new potential water sources both surface and sub surface system, application to conveyance provisions, crops and cropping system aligned to available/designed quantity of water and suitability to local agro ecology. All activities pertaining to water harvesting, water augmentation from surface ad sub surface sources, distribution and application of water including repair, renovation and restoration of water bodies, major, medium and minor irrigation works, command area development etc. are to be taken up within the frame work of this muster plan. Emphasis is to be given for deriving the potential benefit from low hanging fruits like extending the reach/coverage of water source through effective distribution and application mechanism,reducing the gap between potential created and utilized through more focus on command area development and precision irrigation.Proper integration of creation of diversion head work and water harvesting structures, distribution system like canals and command area development works and precision farming is to be made for best possible use of water resources.The block wise status of surface and groundwater water availability for the district is given in Annexure III.

Drainage System

The Brahmaputra river controls the main drainage system in the district. The Jia Bharali-Gabharu-Ghiladhari-Bargang-Belsiri–System that debouches in Brahmaputra forms an intricate drainage network in the district. Jia Bharali is the largest tributary of river

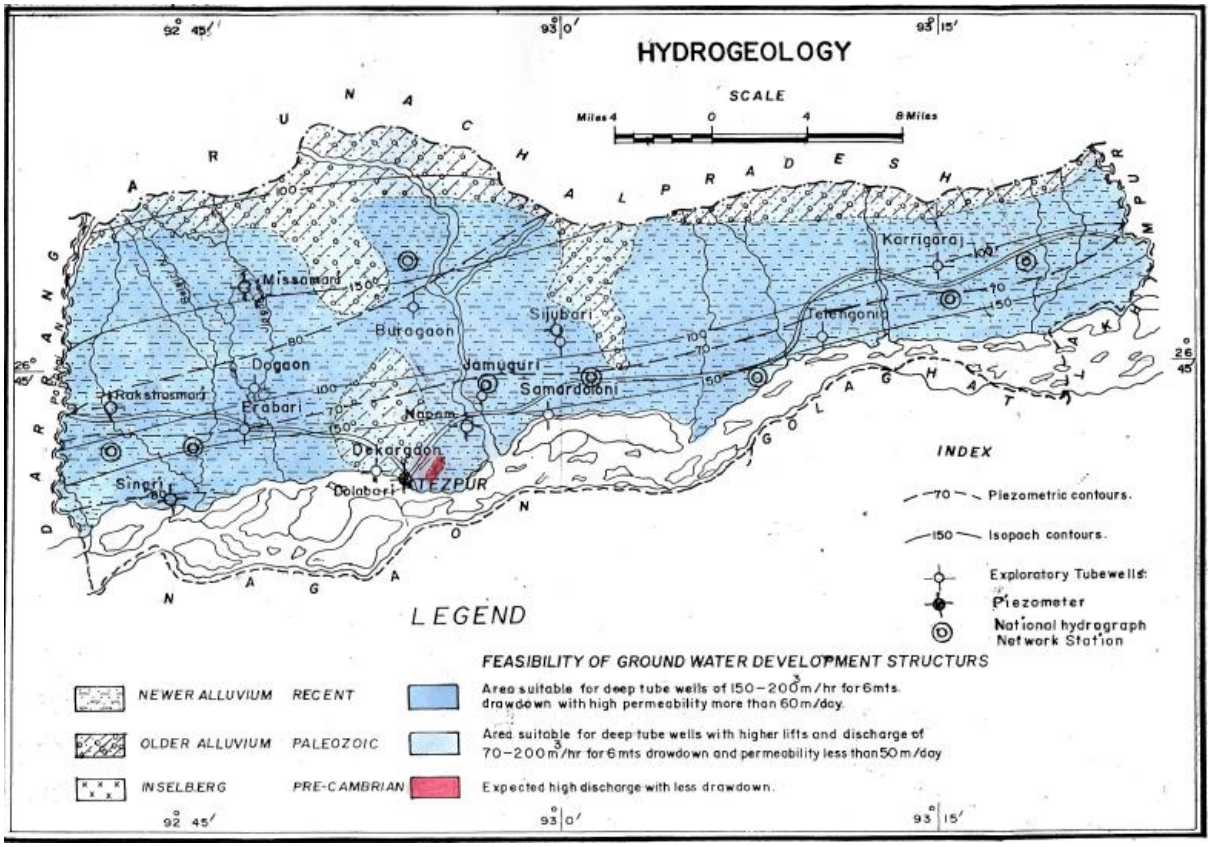
Brahmaputra originating from the Himalaya. The tributaries are in general meandering as well as braided in nature. Peak discharge is observed during monsoon and generally perennial in nature. However, near the foothills small streams generally dry up during the month of March/April. The riverbed and the bank materials are boulders, cobbles, pebbles and sands of various grades with very low clay materials concentration. Many of these surface water sources in the district are used for flow irrigation schemes by creating the diversion head works across the perennial source.

3.2 Status of Ground Water Availability

Hydrogeology

The district can be divided into two distinct hydro geological units, *viz*., semi consolidated and unconsolidated formations based on geology and hydro geological character.The semi-consolidated formation composed of Neogene Siwalik Group of rocks bordering the northern boundary of the district. The Siwalik rocks are not suitable for ground water development. A very small area in the extreme southern part is occupied by consolidated Archean rocks.

The major water bearing formations include alluvial sediments in foothills and flood plain that constitute the unconsolidated formation. The piedmont zone extends over 8-10km from the foothill, which is laterally followed by younger flood plain area extending up to northern bank of the Brahmaputra river in south. The alluvial formations in the foothills are composed of sand, pebble, cobble and boulders. These materials have high permeability. In the flood plain area, however, little gravel mingles with different grades of sand.



Map 3-1: Hydrogeological map of Sonitpur district

Shallow Aquifer

The water bearing horizons occurring within 30-50mbgl is considered to constitute shallow aquifer system. Ground water in this aquifer occurs under unconfined to semi-confined conditions. The aquifer materials comprise sands of different grades with varying proportions of gravels. The grain size of the aquifer materials is found to decrease towards the southern part of the district. The semi-confining layers are not persistent throughout the district. Thedevelopment of groundwater from the aquifer for domestic and irrigational purpose is by open wells (Dug wells) and shallow tube wells. The performance of the shallow tube wells constructed by State Government for irrigation purpose indicates that the shallow aquifer system is quite potential. A shallow tube well, constructed down to the depth of 30 to 40 m, tapping 6 to 15 m of aquifer gives discharge of 10-36 m^3/hr.

Deeper Aquifer

In the deeper aquifers, ground water occurs under semi-confined to confined conditions. The aquifer materials are composed of sands and gravels of different size and grade. In this district, CGWB, NER had explored the subsurface down to the depth of 301 m at Erabari.

The cumulative thickness of the granular zones in the deeper aquifer varies from 60 to 150m. There is a clear distinction of grain size of aquifer materials in the northern, southern and

western part of the district. Presence of multiaquifer system in the western part of the district around Dholpur, Narayanpur is deciphered from lithologs. The confining layers are not persistent.

However, towards east, around Panigaon and Dhakuakhana areas, single aquifer zoneis found down to the depth of 130 mbgl. The grain size of the aquifer material increases towards north, i.e., towards the foothill.

Ground Water Movement

As mentioned earlier the district is bounded in the north by Arunachal Himalayas and the south by the Brahmaputra River, evidently the ground water flow direction is from the higher elevation in north towards the plain area in the south. In the western part of the district the ground water flow is from northwest to southeast. In general the gradient of flow is high towards west as compared to the gradient in the eastern part. In the northern foothill region, the water table gradient is steeper (1.5m/km) and it forms the recharge zone for the entire district.

Depth to Water Level

CGWBis monitoring 31 ground water wells (GWW) in Sonitpur district. During 2012, pre-monsoon depth to water level varied from 2.16 to 9.21 mbgl and post-monsoon depth to water level varied from 0.76 to 4.57 mbgl. During pre-monsoon period about 67% of GWM stations showed water level between 2-5 mbgl and rests showed water level below 5-10 mbgl. During post-monsoon period about 43% of GWM stations showed water level above 3mbgl and rests showed water level between 2-5 mbgl.

Water Level Fluctuations

The study of the water level data has revealed that the general fluctuation of water table during pre and post-monsoon is in between 0 to 2 m in plain area and more than 2 m in Biswanath (occupied by Archean rocks) area adjacent to river Brahmaputra. The major parts of the gross rise in water table during April to July dissipates quickly. Low ground water fluctuation in the area is due to low ground water draft and rapid ground water movement through the aquifer where by and large scale draft at one place is compensated by ground water recharge from other places.

Long Term Water Level Trend

Long term ground water level trend for post-monsoon period (Nov, 2001 to 2010), shows that 3 GWMS indicate rise in water level whereas 14 GWMS indicate fall. Rise in water level ranges from 0.003 to 0.081 m/year while fall in water level ranges from 0.004 to 0.388 m/yr.

Ground Water Resources

Methodology adopted for ground water resource estimation of Sonitpur District of Assam is as per GEC 1997 Report, i.e. Ground Water Level Fluctuation and Rainfall infiltration factor Method. The net ground water availability in Sonitpur District as per latest report of CGWB is 177627 Hect. The existing gross ground water draft for irrigation is 6585 Ha-m and overall draft is 10465 ha-m and the stages of development are 6% only.

Future provision for domestic and Industrial use is 4741 Ha-m and for Irrigation use is 166301 ha-m. Assessment unit can be categorized into 4 categories as SAFE, SEMI-CRITICAL, CRITICAL, and OVER-EXPLOITED. In Sonitpur district stage of ground water development is 6%, which shows under the SAFE category. As long-term water level trend does not show any major change, so the whole district may be considered as SAFE.

Status of Ground Water Development for *Irrigation*

The Irrigation potentials are created in the district through flow irrigation, lift irrigation and Ground water lifts. Shallow tube wells are the most common ground water abstraction structures used for irrigation with yields ranging from, 10 to 30 m^3/hr for a drawdown of less than 2 m.. The total ground water draft for irrigation in the district has been worked out to be about 6585 ham.

The detailed status of ground water, draft, recharge and gaps for thedistrict as collected from CGWB is given separately in table below.

Table 3-1: Status of Ground Water Availability

District	Status of Block as per Central Ground Water Board Notification			Ground Water (BCM)		
	Critical	Semi-Critical	Safe	Draft	Recharge	Gap
Sonitpur			Safe	0.01047	1.78667	1.7762

Source: CGWB, Guwahati Regional Office

3.3 Status of Command Area

For optimum utilization of the created irrigation potential, the command area development programme was taken up in the district for the command of Bordikorai FIS and an amount of Rs 3915.00 Lakh was sanctioned for CAD & WM activities for an area of 16470 Hecatres and so far a CCA of 1850 Hect was covered under CAD. The remaining area of 14620 Hect at an estimated cost of Rs 3526.00 lakh would be taken up during 2016-18 and as such considered under PMKSY. The CAD activities for some other assured command of many surface flow irrigation schemes in the district are proposed under PMKSY (Har Khet Ko

Pani). Block wise status of command area for Bordikarai Irrigation Scheme is given in Annexure IV.

3.4 Existing type of Irrigation

The Irrigation department in Sonitpur district has one Major and a number of minor irrigation schemes constructed on the surface and ground water sources. The 'Bordikorai Irrigation Scheme', the only major irrigation project of the district is constructed across the Bor-dikorai river, a tributary of Jia Barali at Seijusa. The ultimate irrigation potential of the project is 34000 Hect (AIA). The head work is 260.50 m in length and the main canal head regulator was provided to carry a discharge of 36 cumecs to irrigate an agricultural area of 16994 Hect (NIA)covering an area of 14778 Ha of Naduar and 2216 Hect of Sootea development block. The canal system consists of one main canal, 8.058 Km long and 23 nos of branch canals having a total length of 165.477 km. The scheme started supplying water partially since 1987-88 and subsequently increased the creation of irrigation potential in the following years. About 133 villages of 5 revenue mouzas are benefitted by the project.

The department has been operating and maintaining some of the minor flow irrigation schemes constructed by the erstwhile Agriculture department before the irrigation department was created. Of course, some minor repair/renovations were made under different source of funds to make the irrigation potential productive. Lift and deep tube well irrigation schemes were also taken up in different cultivable area of the district. Some of the schemes became defunct either due to natural reasons such as severity of flood or lack of source of water due to diversion or due to wear and tear for prolonged uses or lack of timely maintenance for want of required funds etc. Some of these defunct schemes may be made reproductive if funds are made available.

Irrigation Potential creation and utilization

Although the irrigation potential has been created in the form of surface and ground water extraction for the best utilization by the farmers in their crops, the gap between the availability and utilization of irrigation potential has been a matter of concern. If the supplied water is not fully utilized, the spill over water loss would increase and the efficiency of the irrigation system gets reduced. Therefore, to bridge the gap between irrigation potential created/available and utilization, Water User Associations (WUA) have to play a major role in the Participatory Irrigation Management(PIM). The department's responsibility is for ensuring the supply and management of the irrigation structures whereas the other aspects

such as water distribution through warabandi, collection of irrigation service charges, regular O&M of the on farm developmental activities/ practices are the matter of WUA'sresponsibilities. Unless and until the WUAs are made fully functional and the ownership of the irrigation schemes are transferred, the issues related to the gap between Irrigation Potential availabilities and utilization by farmers would continue to be a serious matter of concern. The following table shows the gap between Irrigation Potential Created and utilization in respect of the irrigation schemes in the district.

Table 3-2: Gap between IPC & IPU for irrigation schemes in Sonitpur during 2015-16

Description of Irrigation Scheme	Irrigation Potential (in Hect)		
	Created/ Available	Utilization	Gap
Major IS (Surface Flow)	11140	8100	3040
Minor IS			
Surface Flow	9110	7617	1493
Ground water (Deep)	370	250	120
Surface lift (ELIS)	1430	1050	380
Total	**22050**	**17017**	**5033**

The irrigation potential utilized in respect of the major and minor irrigation schemes in the district was only 17017 Ha which is 10.30% of the total cultivable area of 16129 Ha. The available potential of 5033 (22.82%) remained unutilized during the year 2015-16. The ageing old irrigation system are operating below the level of created potential due to the continued wear and tear, lack of timely maintenance due to insufficient funds, improper water distribution and losses during conveyance etc. Thus, there is a need to improve theirrigation use efficiencies of the irrigation systems by addressing all the related issues of the stakeholders including the water user groups. Block wise existing types of Irrigation is given in Annexure V.

Chapter 4 : Water Requirement/Demand

Whenever an engineer is given the duty to design a water supply scheme for a particular use of the community, it becomes imperative upon him, to first of all, evaluate the amount of water available and the amount of water required/ demanded by the public. In fact, the first study is to consider the demand, and then the second requirement is to find sources to fulfil that demand. Many a times a compromise is sought between the two. It is very difficult to precisely assess the quantity of water demanded by the public since there are many variable factors affecting water consumption. The various type of water demands for a district may be as follows.

4.1 Domestic Water Demand

This includes the water requirement in private buildings for drinking, cooking, bathing, lawn sprinkling,gardening, sanitary purposes etc. The amount of domestic water consumption per person shall vary according to the living condition soft he consumers. On an average, this domestic consumption under normal conditions in Indian city is expected to be around 135 litres/day/person as per IS: 1172-1971.In a developed and an effluent country like USA, this figure goes as high as 340 litres/day/person. This is because more water is consumed in rich living, air cooling/conditioning, automatic household appliances, car washing etc.The total domestic consumption generally amounts to 55 to 60% of the total water consumption.

The total domestic water demand shall be equal to the total design population multiplied by the per capita domestic consumption i.e. 135 litre/day. As the last population census was made in 2011, the actual population of the district in 2015 is not readily available. Considering the population of the Sonitpur district as per Census,2011 the projected population in 2020 is worked out assuming the last decadal growth of 17.07%and annual exponential growth rate of 1.58% to apply for the period 2011-2020 (9 years).The domestic water demand is given in the table below.

Table 4-1: Domestic water demand (BCM)

Blocks	Population as per 2011 census	Population in 2015	Water demand (BCM)	Projected Population in 2020	Gross Water Demand (BCM)
Borsola	197345	210114	0.01	227243	0.011
Dhekiajuli	224611	239144	0.011	258640	0.012
Bihaguri	86436	92029	0.004	99532	0.005
Gabharu	156044	166141	0.008	179685	0.009
Balipara	233920	249055	0.012	269359	0.013
Rangapara	98912	105312	0.005	113898	0.006
Naduar	90911	96793	0.004	104684	0.005

Sootea	124909	132991	0.006	143833	0.007
Sakomatha	86938	92563	0.004	100109	0.005
Biswanath	64828	69022	0.003	74650	0.004
Baghmara	87762	93441	0.004	101058	0.005
Behali	87951	93642	0.004	101276	0.005
Chaiduar	139852	148900	0.007	161040	0.008
Pubchaiduar	113792	121154	0.006	131032	0.006
Population in Town & municipal area of the district	129899	138303	0.007	149579	0.007
Total population In the district	**1924110**	**2048604**	**0.095**	**2215618**	**0.108**

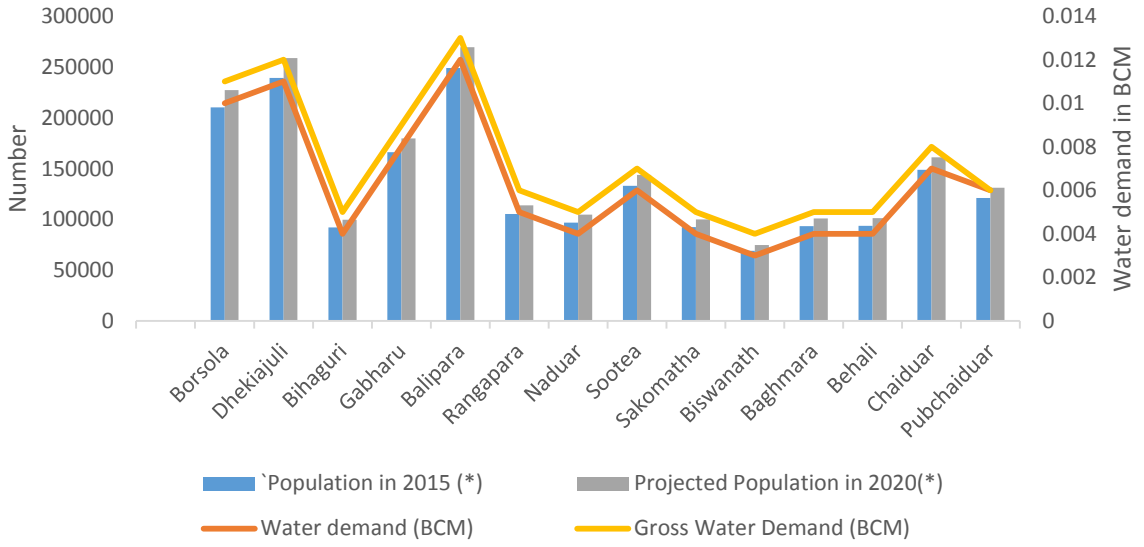


Figure 4-1: Population and domestic water requirement

4.2 Crop water demand

Water requirement of a crop means the total quantity and the way in which a crop requires water, from the time it is sawn to the time it is harvested (crop period). Different crops will have different water requirements and the same crop may have different water requirements at different places of the same country depending upon the climate, type of soil,method of cultivation and useful rainfall etc. The total quantity of water required by the crop for its full growth may be expressed in Hectare-m or in Million Cubic meter or simply as a depth to which the total supplied irrigation water would stand above the surface without percolation or evaporation. This depth is known as delta for the crop. On the other hand duty is defined as the area irrigated per cumec of discharge running for the base period. The duty helps us in designing the efficient canal irrigation system. If we know the crops area required to be irrigated and their duties, we can work out the discharge required for designing the canal.

Consumptive use for a particular crop may be defined as the total amount of water used by the plant in transpiration (building of plant tissues etc.) and evaporation from adjacent soils or from plant leaves, in any specified time. Therefore, crop water requirements are defined as "the depth of water needed to meet the water loss through evapo-transpiration of a disease free crop, growing in large fields under non restricting soil conditions including soil water and fertility and achieving full production under the given growing environment. Consumptive use for a particular crop may be defined as the total amount of water used by the plant in transpiration (building of plant tissues etc.) and evaporation from adjacent soils or from plant leaves, in any specified time.Thus crop water requirement is nothing but the consumptive use itself, but exclusive of effective precipitation, stored soil moisture or ground water. Consumptive use or evapotranspiration depends upon all those factors on which evaporation and transpiration depend such as, temperature, sunlight, wind movement etc. The crop water requirement of different bocks in the Sonitpur district has been worked out and a statement is prepared as shown in table below which outlines the required and available water potential in the district.

Table 4-2: Crop water requirement (BCM)

Block	Area sown (ha)	Irrigated area (ha)	Crop Water Demnd (BCM)	Water potential required (BCM)	Existing Water potential (BCM)	Water potential to be created (BCM)
Borsola	11858	2606	0.0264	0.0264	0.00998	0.01642
Dhekiajuli	21917	6248	0.0391	0.0391	0.02368	0.01542
Bihaguri	5859	1084	0.0153	0.0153	0.00346	0.01184
Gabharu	7387	2963	0.0153	0.0153	0.00822	0.00708
Balipara	11862	3536	0.0205	0.0205	0.01816	0.00234
Rangapara	4044	1076	0.0051	0.0051	0.00484	0.00026
Naduar	13761	8620	0.0253	0.0253	0.01971	0.00559
Sootea	11113	1768	0.0191	0.0191	0.01159	0.00751
Sakomatha	6801	2690	0.0111	0.0111	0.00984	0.00126
Biswanath	8845	2070	0.0136	0.0136	0.00721	0.00639
Baghmara	6299	2560	0.0135	0.0135	0.00947	0.00403
Behali	6727	1966	0.0131	0.0131	0.00785	0.00525
Chaiduar	15058	1230	0.0259	0.0259	0.00553	0.02037
Pubchaiduar	20336	3740	0.0365	0.0365	0.00774	0.02876
Total	**151867**	**42157**	**0.2798**	**0.2798**	**0.14728**	**0.13252**

4.3 Livestock water demand

As per the livestock census of 2003 & 2007, there was a population growth of 28.83% in four years(Average yearly growth rate being 7.20%).The livestock water demand of the district is determined by multiplying the total livestock population in the district by the per capita water

requirement (litres/day/No) for each category of the population. With the existing population recorded for a base year, the total projected livestock population in 2020 may be worked out and accordingly the livestock water demand is worked out. The livestock water demand is given in the table below.

Table 4-3: Livestock water demand (BCM)

Block	Total number of livestock	Present Water demand (BCM)	Water demand in 2020 (BCM)	Existing Water potential (BCM)	Water potential to be created (BCM)
Borsola	325587	0.0075	0.0105	0.0075	0.003
Dhekiajuli	552723	0.0127	0.0177	0.0127	0.005
Bihaguri	278264	0.0064	0.0089	0.0064	0.0025
Gabharu	332871	0.0076	0.0106	0.0076	0.003
Balipara	279252	0.0064	0.0089	0.0064	0.0025
Rangapara	258451	0.0059	0.0082	0.0059	0.0023
Naduar	215043	0.0049	0.0068	0.0049	0.0019
Sootea	181029	0.0041	0.0057	0.0041	0.0016
Sakomatha	206753	0.0047	0.0065	0.0047	0.0016
Biswanath	205768	0.0047	0.0065	0.0047	0.0018
Baghmara	208624	0.0048	0.0067	0.0048	0.0019
Behali	204868	0.0047	0.0065	0.0047	0.0018
Chaiduar	209014	0.0048	0.0067	0.0048	0.0019
Pubchaiduar	203188	0.0046	0.0064	0.0046	0.0018
Total	**3661435**	**0.0838**	**0.1166**	**0.0838**	**0.0326**

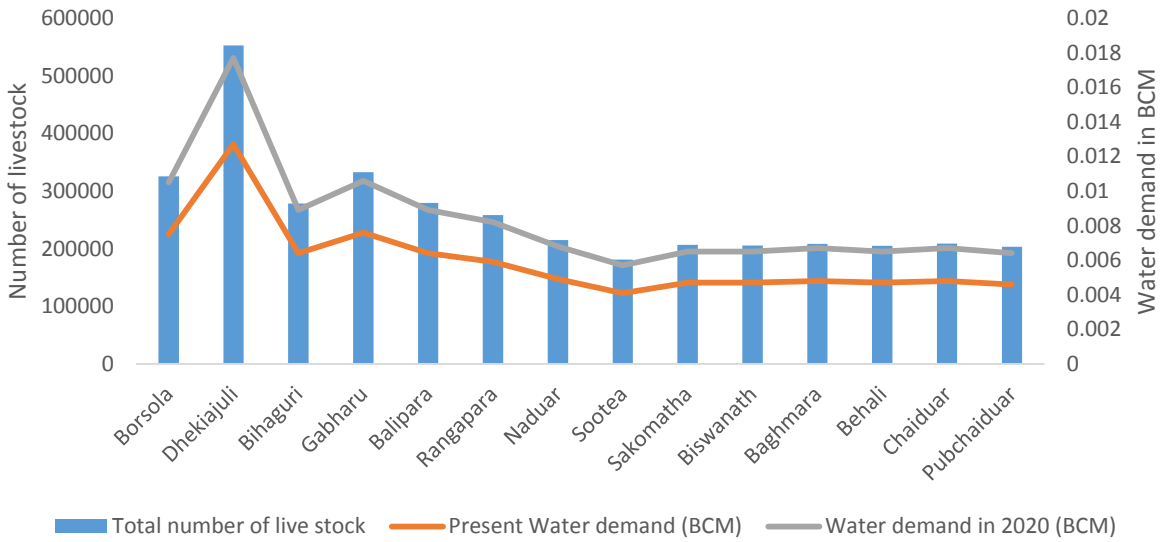


Figure 4-2: Population and water requirement of livestock

4.4 Industrial water demand

This includes the quantity of water required to be supplied to offices, factories, different industries, hostels, hospitals etc. This quantity will vary considerably with the nature of city and with the type of industries and commercial establishments present in it.On an average, a

provision of 20-25% of the total water consumption is generally made in the design for these uses. In small residential communities, the industrial use may be as low as 45 /litre/day, but in industrial cities, it may be as high as 450 litres/day. Some of the industries may develop their own supplies and may place little or no demand on municipal system. Zoning of the city affects the location of the industries and may help in estimating future industrial demands.Commercial districts include office buildings, ware houses, stores, hotels etc. and their demand is not high, average about 45 litres/day/person.The industrial water demand for the Sonitpur district is given in table below.

Table 4-4: Industrial water demand (BCM)

Block	Name of Industry	Water demand (BCM)	Water demand in 2020 (BCM)	Existing Water potential (BCM)	Water potential to be created (BCM)
Borsola	Tea Industry	0.00000045	0.000000495	0.00000045	0.000000045
Dhekiajuli	Food & Brick Industries etc.	0.00000522	0.000005742	0.00000522	0.000000522
Bihaguri	-	-	-	-	-
Gabharu (including town & municipal area)	Food & Beverages, Construction Industries	0.000039665	0.000043852	0.000039665	0.000004187
Balipara	Construction Industries	0.00000486	0.000005346	0.00000486	0.000000486
Rangapara	Tea Industry	0.00000675	0.000007452	0.00000675	0.000000702
Naduar	Food & Construction Industry	0.00000051	0.000000561	0.00000051	0.000000051
Sootea	Tea Industry	0.0000021	0.00000234	0.0000021	0.00000024
Sakomatha	Food,Tea,Automobile service, Construction Industry	0.0151	0.064	0.0151	0.0489
Biswanath	Food,Tea,Automobile service,Ice & Construction Industry	0.00927	0.037	0.00927	0.0278
Baghmara	Food,Tea,Automobile service, Construction Industry	0.0058	0.0232	0.0058	0.0174
Behali	Food,Tea,Automobile service,Ice & Construction Industry	0.029422	0.116	0.029422	0.086578
Chaiduar	Food,Tea,Automobile service, Construction Industry	0.0046	0.0184	0.0046	0.0138
Pubchaiduar	Food,Tea,Automobile service,Ice & Construction Industry	0.002	0.008	0.002	0.006
Total		**0.0662516**	**0.26666578**	**0.0662516**	**0.20041622**

Source: District Industry Centre, Sonitpur

4.5 Water demand for Power Generation

As reported by the Assam Power Distribution Ltd (APDCL), CAZ, Sonitpur, presently there is no any power plant in the Sonitpur district and in the years to come i.e. up to the year 2020, there is no any plan to tap resources for power generation and it was informed that the water requirement for power generation may be treated as nil. Hence there is no demand for water from power sector.

4.6 Total water demand of the district for various sectors

The total water demand of the district for all the sectors described in 4.1 to 4.5 are given in the are assessed by summing up all the values of water demand for domestic uses, livestock, power and industrial/commercial uses etc. The current water demand has been indicated in Table 4-5 and the projected water demand has been depicted in Table 4-6. Total present water requirement for the district is 517.85 MCM while the total future water requirement for the district is 771.066 MCM. In present, maximum water demand is for Dhekiajuli block which is 62.81 MCM while minimum is for Rangapara block which is 16.01 MCM.In projected future, maximum water demand is for Behali block which is 140.6 MCM while minimum is for Rangapara block which is 19.30 MCM.

Table 4-5: Present Water Demand of the district for various sectors

Block	Demand from Components (BCM)					Total BCM
	Domestic	Crop	Livestock	Industrial	Power generation	
Borsola	0.01	0.026	0.0075	0.00000045	0	0.0439
Dhekiajuli	0.011	0.039	0.0127	0.00000522	0	0.06281
Bihaguri	0.004	0.015	0.0064	-	0	0.0257
Gabharu	0.008	0.015	0.0076	0.000039665	0	0.03094
Balipara	0.012	0.021	0.0064	0.00000486	0	0.0389
Rangapara	0.005	0.005	0.0059	0.00000675	0	0.01601
Naduar	0.004	0.025	0.0049	0.00000051	0	0.0342
Sootea	0.006	0.019	0.0041	0.0000021	0	0.0292
Sakomatha	0.004	0.011	0.0047	0.0151	0	0.0349
Biswanath	0.003	0.014	0.0047	0.00927	0	0.03057
Baghmara	0.004	0.014	0.0048	0.0058	0	0.0281
Behali	0.004	0.013	0.0047	0.029422	0	0.05122
Chaiduar	0.007	0.026	0.0048	0.0046	0	0.0423
Pubchaiduar	0.006	0.037	0.0046	0.002	0	0.0491
Total	**0.088**	**0.28**	**0.0838**	**0.06625155**	**0**	**0.51785**

Table 4-6: Total Water Demand of the district for various sectors (Projected for 2020)

Block	Demand from Components (BCM)					Total BCM
	Domestic	Crop	Livestock	Industrial	Power generation	
Borsola	0.011	0.0264	0.0105	0.000000495	0	0.0479
Dhekiajuli	0.012	0.0391	0.0177	0.000005742	0	0.068806
Bihaguri	0.005	0.0153	0.0089	-	0	0.0292
Gabharu	0.009	0.0153	0.0106	0.000043852	0	0.034944
Balipara	0.013	0.0205	0.0089	0.000005346	0	0.042405
Rangapara	0.006	0.0051	0.0082	0.000007452	0	0.019307
Naduar	0.005	0.0253	0.0068	0.000000561	0	0.037101
Sootea	0.007	0.0191	0.0057	0.00000234	0	0.031802
Sakomatha	0.005	0.0111	0.0065	0.064	0	0.0866
Biswanath	0.004	0.0136	0.0065	0.037	0	0.0611
Baghmara	0.005	0.0135	0.0067	0.0232	0	0.0484
Behali	0.005	0.0131	0.0065	0.116	0	0.1406
Chaiduar	0.008	0.0259	0.0067	0.0184	0	0.059
Pubchaiduar	0.006	0.0365	0.0064	0.008	0	0.0569
Total	**0.108**	**0.2798**	**0.1166**	**0.26666578**	**0**	**0.771066**

4.7 Water Budget

The water budget of the district for the base year 2015-16 and 2020-21 as per water availability and demand is given in the table below. The present water availability/demand and also for 2020 are worked out as explained above and the water gap is found out. The water budget clearlyshows the water gapof 0.365 BCM in present and of 0.611 BCM in future betweenthe water availability and requirement**.**

Table 4-7: Water Budget (Volume in BCM)

Blocks	Existing Water availability (BCM)		Total (BCM)	Water Demand (BCM)		Water Gap (BCM)	
	Surface water	Ground water		Present	Projected (2020)	Present	Projected (2020)
Borsola	0.005	0.00818	0.01318	0.0439	0.0479	0.03072	0.03472
Dhekiajuli	0.0018	0.02189	0.02369	0.06281	0.06881	0.039115	0.045116
Bihaguri	0.00084	0.002628	0.00347	0.0257	0.0292	0.022232	0.025732
Gabharu	0.00054	0.01018	0.01072	0.03094	0.034944	0.02022	0.024224
Balipara	0.00045	0.017712	0.01816	0.038905	0.042405	0.020743	0.024243
Rangapara	0	0.00484	0.00484	0.016007	0.019307	0.011167	0.014467
Naduar	0.01215	0.00756	0.01971	0.034201	0.037101	0.014491	0.017391
Sootea	0.006159	0.005436	0.0116	0.029202	0.031802	0.017607	0.020207
Sakomatha	0.008025	0.001824	0.00985	0.0349	0.0866	0.025051	0.076751
Biswanath	0.00321	0.00405	0.00726	0.03057	0.0611	0.02331	0.05384
Baghmara	0.0056	0.00387	0.00947	0.0281	0.0484	0.01863	0.03893
Behali	0.000495	0.007362	0.00786	0.051222	0.1406	0.043365	0.132743
Chaiduar	0	0.005535	0.00554	0.0423	0.059	0.036765	0.053465
Pubchaiduar	0.001395	0.006345	0.00774	0.0491	0.0569	0.04136	0.04916
Total	**0.045664**	**0.107412**	**0.153076**	**0.517852**	**0.764066**	**0.364776**	**0.61099**

Chapter 5 : Strategic Action Plan for Irrigation in District under PMKSY

5.1 Department wise, year wise plan

Total plan of Sonitpur district for four years works out to be Rs. 187326.8lakh (Table 5-1). Maximum share of Rs. 166878.14 lakh (89.08%) is for Irrigation department followed by Agriculture department with Rs. 17886.2 lakh (9.55%) and Soil Conservation department with Rs. 2562.54 lakh (1.37%). The total plan of four years is equally divided in to 4 years i.e. 2016-17, 2017-18, 2018-19 and 2019-20.Fig.5-1indicates department-wise year -wise share in PMKSY for four years from 2016-17 to 2019-20.

Table 5-1: Department-wise year-wise proposal under PMKSY

Department	Year				Total
	2016-17	2017-18	2018-19	2019-20	
Agriculture	4471.55	4471.55	4471.55	4471.55	17886.2
Irrigation	41719.54	41719.54	41719.54	41719.54	166878.141
Soil Conservation	640.634	640.634	640.634	640.634	2562.536
Total	**46831.72**	**46831.72**	**46831.72**	**46831.72**	**187326.877**

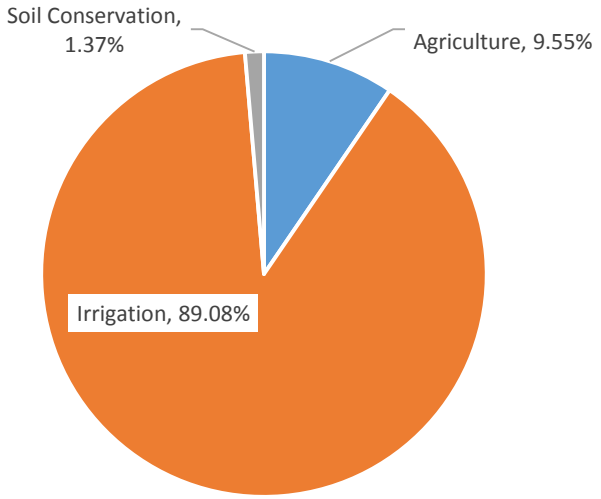


Figure 5-1: Share of departments in proposal

5.2 Component wise, year wise plan

As discussed above about various components of PMKSY, the plan is prepared accordingly. Table 5-2 shows component wise plan for 4 years starting from 2016-17 to 2019-20. AIBP component has a total proposal of Rs. 36374.74 lakh which is 19% of the total PMKSY proposal of the district. This component will be mainly executed by Irrigation department. Har Khet ko Pani (HKKP) component is of Rs. 130503.4 lakh (70%), which will be executed

by Irrigation department. Per Drop More Crop (PDMC) components is of Rs. 17886.2 lakh (10%), which will be executed mainly by Irrigation departments. Watershed component has a total proposal of Rs. 2562.536 lakh which is 1% of district's PMKSY proposal. This component will be implemented by Soil Conservation department. All the stakeholders need to have coordination among themselves to have the maximum irrigation efficiency and to avoid duplicity. Fig. 5-2 represents the graphical representation of various components of PMKSY, year wise plan and share.

Table 5-2: Component wise, year wise plan

Component	2016-17	2017-18	2018-19	2019-20	Total
AIBP	9093.685	9093.685	9093.685	9093.685	36374.74
HKKP	32625.85	32625.85	32625.85	32625.85	130503.4
PDMC	4471.55	4471.55	4471.55	4471.55	17886.2
Watershed	640.634	640.634	640.634	640.634	2562.536
Total	**46831.72**	**46831.72**	**46831.72**	**46831.72**	**187326.8**

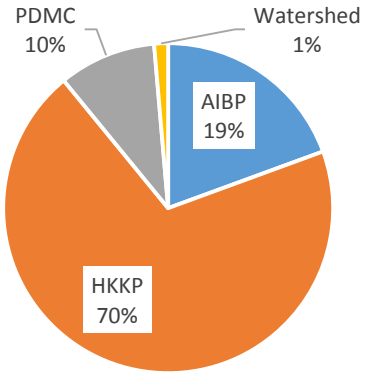


Figure 5-2: Component wise plan under PMKSY

5.3 Block wise, year wise plan

Block wise, year wise plan for the district is as shown in table below. For all the blocks, the amount has been same for each year i.e. 2016-17, 2017-18, 2018-19 and 2019-20. Overall, the maximum amount has been proposed for Pubchaiduar block which is Rs. 31809.01 lakh and the minimum amount is proposed for Biswanath block which is Rs. 4089.72 lakh.

Table 5-3: Block wise, year wise plan

Blocks	2016-17	2017-18	2018-19	2019-20	Total
Borsola	4663.978	4663.978	4663.978	4663.978	18655.91
Dhekiajuli	7199.538	7199.538	7199.538	7199.538	28798.15
Bihaguri	2396.175	2396.175	2396.175	2396.175	9584.699
Gabharu	1031.116	1031.116	1031.116	1031.116	4124.463
Balipara	2527.41	2527.41	2527.41	2527.41	10109.64
Rangapara	1403.958	1403.958	1403.958	1403.958	5615.832
Naduar	4371.85	4371.85	4371.85	4371.85	17487.4
Sootea	3208.993	3208.993	3208.993	3208.993	12835.97

Sakomatha	2385.872	2385.872	2385.872	2385.872	9543.488
Biswanath	1022.43	1022.43	1022.43	1022.43	4089.72
Baghmara	1948.74	1948.74	1948.74	1948.74	7794.958
Behali	2152.625	2152.625	2152.625	2152.625	8610.5
Chaiduar	4566.775	4566.775	4566.775	4566.775	18267.1
Pubchaiduar	7952.253	7952.253	7952.253	7952.253	31809.01
Total	**46831.7**	**46831.7**	**46831.7**	**46831.7**	**187326.8**

5.4 Block wise, component wise plan

Block wise, component wise plan for the district is as shown in table below. For AIBP component, Nandur block has the highest amount of Rs. 12663.8 lakh while Sakomatha, Behali and Chaiduar block have not proposed any amount for the same. For Har Khet Ko Pani component, Dhekiajuli block has the highest amount of Rs. 26655 lakh while Gabharu block has the lowest amount of Rs. 2500 lakh. For Per Drop More Crop component, Bihaguri block has the highest amount of Rs. 2872.6 lakh while Sakomatha block has the lowest amount of Rs. 352.3 lakh, For PMKSY-Watershed component, Dhekiajuli blokc has the highest amount of Rs. 280.56 lakh while Baghmara block has the lowest amount of Rs. 137.328 lakh.

Table 5-4: Block wise, component wise plan

Blocks	AIBP	HKKP	PDMC	Watershed	Total
Borsola	55.45	17385.46	1046.2	168.8	18655.91
Dhekiajuli	249.785	26655	1612.8	280.56	28798.15
Bihaguri	554.33	5991.225	2872.6	166.544	9584.699
Gabharu	220.207	2500	1208.8	195.456	4124.463
Balipara	89.8	8047.5	1799.7	172.64	10109.64
Rangapara	0	4784.6	653.6	177.632	5615.832
Naduar	12633.8	2840	1807	206.6	17487.4
Sootea	279.057	11145.95	1235.2	175.76	12835.97
Sakomatha	0	9012.5	352.3	178.688	9543.488
Biswanath	220.492	3265	438.5	165.728	4089.72
Baghmara	19.63	7020	618	137.328	7794.958
Behali	0	8017.16	441.9	151.44	8610.5
Chaiduar	0	16301.49	1762.6	203.008	18267.1
Pubchaiduar	22052.19	7537.47	2037	182.352	31809.01
Total	**36374.74**	**130503.4**	**17886.2**	**2562.536**	**187326.8**

5.5 Block wise, department wise plan

Block wise, component wise plan for the district is as shown in table below. Agriculture department has proposed highest amount for Bihaguri block (Rs. 2872.6 lakh) while the lowest for Sakomatha block (Rs. 352.3 lakh).Irrigation department has proposed highest amount for Pubchaiduar block (Rs. 29589.66 lakh) while the lowest for Rangapara block (Rs.

4784.6 lakh).Soil Conservation department has proposed highest amount for Dhekiajuli block (Rs. 280.56 lakh) while the lowest for Behali block (Rs. 151.44 lakh).

Table 5-5: Block wise, department wise plan

Blocks	Agriculture	Irrigation	Soil Conservation	Total
Borsola	1046.2	17440.91	168.8	18655.91
Dhekiajuli	1612.8	26904.79	280.56	28798.15
Bihaguri	2872.6	6545.555	166.544	9584.699
Gabharu	1208.8	2720.207	195.456	4124.463
Balipara	1799.7	8137.3	172.64	10109.64
Rangapara	653.6	4784.6	177.632	5615.832
Naduar	1807	15473.8	206.6	17487.4
Sootea	1235.2	11425.01	175.76	12835.97
Sakomatha	352.3	9012.5	178.688	9543.488
Biswanath	438.5	3485.492	165.728	4089.72
Baghmara	618	7039.63	137.328	7794.958
Behali	441.9	8017.16	151.44	8610.5
Chaiduar	1762.6	16301.49	203.008	18267.1
Pubchaiduar	2037	29589.66	182.352	31809.01
Total	**17886.2**	**166878.1**	**2562.536**	**187326.8**

5.6 Cost of components under PMKSY-AIBP

The strategic action plan for AIBP in the district is given in Annexure VI. It includes the following-

1. Augmentation, renovation of the existing Bordikorai Major Irrigation Schemes:

Total IP of the project is 16470 Hect including the existing available IP of 11140 Hect and IP to be restored is 5330 Hect. The total cost component under Major Irrigation head under AIBP is Rs 12633.80 Lakh with a project implementation schedule of 4 years.

2. The cost of a new medium irrigation project, “Buroi FIS” is Rs 22,000.00 lakh with a contemplated IP of 8880 Hectares.
3. The balance IP of the following existing minor irrigation projects are also considered. These projects are in ongoing stage and balance IP (difference of the already created IP from the estimated IP) are contemplated to be created by March,2017. The corresponding cost components of these projects as shown below are also considered in the Strategic action plan for surface minor irrigation in Sonitpur district. This provision is shown as the fund would be required to complete the ongoing minor irrigation projects under AIBP. The total provision under Surface Minor Irrigation Head under AIBP is Rs. 1740.741 Lakh with a contemplated IP of 2430 hectares.

Thus the total cost under AIBP is Rs 36374.741 Lakh with a total contemplated IP of 16560 hectares. (Rs in Lakh)

Name of Irrigation Scheme (funded under AIBP of 2009-10)	Name of block	Sanctioned Amount	Expenditure upto 03/2016	Balance fund required for 2016-17	IP already created (in Hect)	Balance IP to created (in Hect)
Kauribeel LIS	Sootea	292.43	225.77	66.66	200	100
Ajalasuti LIS(2Pts)	Biswanath	258.07	172.03	86.04	300	100
Chaliachapori Kawaimari LIS (3pts)	Biswanath	496.982	362.53	134.452	100	400
New Ghiladhari LIS (2pts)	Sootea	296.267	195.64	100.627	100	200
Ovotabeel LIS	Sootea	299.99	188.22	111.77	-	300
Tinisuti FIS	Baghmara	99.95	80.32	19.63	-	300
Dhandibeel LIS	Pubchaidua r	246.45	194.26	52.19	300	-
Koloney FIS	Balipara	200.00	110.20	89.80	300	500
Dighalibeel FIS	Bihaguri	871.43	317.10	554.33	500	100
Depota LIS	Gabharu	170.13	51.253	118.877	-	180
Bhojkhowa LIS	Gabharu	122.00	20.87	101.13	-	250
Borsola FIS(Ph II)	Borsola	130.00	74.55	55.45	1200	-
Panbari FIS(Ph II)	Dhekiajuli	421.57	211.33	210.24	784	-
Bengenajuli FIS	Dhekiajuli	138.00	98.455	39.545	800	-
Total		**4043.269**	**2302.528**	**1740.741**	**4584**	**2430**

5.7Cost of component under PMKSY-Har Khet Ko Pani

The strategic action plan for PMKSY (Har Khet Ko Pani) in the district is given in Annexure VII. It includes the following-

1. New Schemes: It includes the provision of new minor irrigation such as surface flow irrigation schemes, surface lift irrigation schemes through diesel/electric/solar pump sets, ground water irrigation schemes through installation of deep tube wells including distribution system etc. Total IP of the contemplated new projects under the PMKSY (Har Khet Ko Pai) is 50660 Hect and the total cost component under this head is Rs 124600.00 Lakh.
2. Renovation of existing schemes (Defunct/Partially Operative): It includes the provision of renovation of the existing schemes which are either partially operative or in defunct state. Total IP to be revived is 3529Hectares and the total cost component under this head is Rs 3740.00 lakh.
3. Ongoing Centrally Sponsored/Funded Schemes: It includes the balance fund requirement during the period 2016-21 in respect of the irrigation schemes sanctioned

in the district under RIDF-XVIII, NABAD & NLCPR etc. Total IP to be created is 930Hectares and the total cost component under this head is Rs 1849.685 lakh.

4. State Planned Ongoing Schemes of Irrigation Department in Sonitpur District:

It includes the balance fund requirement during the period 2016-21 in respect of the ongoing irrigation schemes sanctioned in the district under State Plan, i.e. TSP & SCSP etc. Total IP to be created is 790 Hectares and the total fund requirement under this head is Rs 212.91 lakh. However, this provision is also included under the sectoral components of PMKSY and therefore the total cost under PMKSY is inclusive of the fund requirement under State Plan. The amount is indicated to reflect the fund requirement during the period 2016-20 in respect of the State Plan funded schemes in Sonitpur district.

Block	FIS (no)	LIS (no)	DTW IS (no)	RRR (no)	Lined Field Channel (Ha)	Unlined Field Channel (Ha)	Micro Irriagtion (Ha0	Total IP (Ha)	Estimated Cost (Rs in Lakh)
Chaiduar	18	-	216	-	-	-	150	7020	16200.00
Pub Chaiduar	1	1	121	-	-	-	-	3720	7445.00
Behali	5	2	63	1	200	100	162	3060	7774.00
Bahmara	-	1	94		500	250	60	1955	6220.00
Sakomatha	8	1	42		1900	950	300	1257	3117.50
Biswanath	-	-	46	1	-	-	-	1380	2860.00
Rangapara	2	3	75		-	-	-	1861	4784.60
Balipara	4	1	122		100	50	20	3031	7697.50
Sootea	1	4	133	2	200	100	300	5350	10200.00
Naduar	-	-	54		-	-	-	1080	2700.00
Gabharu	-	-	45		-	-	100	1000	2500.00
Bihaguri	-	1	116		-	-	-	2420	5950.00
Dhekiajuli	20	15	317		-	-	-	11190	25725.00
Borsola	29	9	230		-	-	-	6336	15577.00
Total in District:	**88**	**38**	**1674**	**4**	**2900**	**1450**	**1092**	**50660**	**124600.00**

5.8Cost of component under PMKSY-Per Drop More Crop

The strategic action plan for PMKSY (Per Drop More Crop) in the district is given in Annexure VIII. It includes the provisions for installation of micro irrigation facilities such as drip & sprinkler irrigation schemes, surface lift irrigation schemes through diesel/electric/solar pump sets., ground water irrigation schemes through installation of shallow tube wells including distribution system, training/ extension activities and supplementary management practices such as water harvesting structures for drought proofing etc. Total IP of the contemplated projects under the PMKSY (Per Drop More Crop) is 23705.50 Hect and the total cost component under this head is Rs 17886.20 Lakh.

Block	Drip (nos)	Sprimkler (nos)	STW IS (nos) (Solar/diesel/electricity)	WHS (nos)	Rainguns(nos)	LLP (nos)	Total IP (Ha)	Estimated Cost (Rs in Lakh)
Chaiduar	-	30	2851	-	-	-	2866	1762.60
Pub Chaiduar	-	28	3313	-	-	-	3327	2037.00
Behali	18	50	323	-	160	81	703	441.90
Baghmara	1	54	804	-	117	-	948.50	618.00
Sakomatha	50	86	343	-	-	117	645.00	352.30
Biswanath	15	26	343	-	13	18	636.50	438.00
Soota	-	-	2042	1	-	-	2042	1253.20
Naduar	-	-	1797	-	-	-	-	1807.00
Rangapara	-	-	1056	-	-	-	1066	653.60
Balipara	15	-	2947	-	-	1	2959.50	1799.70
Gabharu	-	-	999	-	-	-	999.00	1208.80
Bihaguri	4	8	1089	-	-	-	1594.00	2872.60
Dhekiajuli	20	80	2493	-	-	-	2543.00	1612.80
Borsola	-	84	1587	-	-	-	1629.00	1046.20
Total in District:	**123**	**446**	**21987**	**1**	**290**	**217**	**23705.50**	**17886.2**

5.9 Cost of component under PMKSY-Watershed

The strategic action plan for PMKSY (Watershed) for all the blocks in the district is given in Annexure IX. It includes the provision for runoff water and improved soil & moisture conservation activities such as ridge area treatment, drainage line treatment, rain or surface water harvesting, in situ moisture conservation and other watershed activities like check dams, nala bunds, farm ponds, tanks etc. Total IP of the contemplated projects under the PMKSY (Watershed) is 19385 hectare and the total cost component under this head is Rs 2562.536 Lakh.

Block	New Structures					Renovated					
	Farm pond (nos)	Check dams (no)	Nallah bund (Rm)	GWRS (nos)	Fisery pond/ Catle ponds (nos)	Farm ponds	Nallah bunds (rm)	GWRS (nos)	Fishery pond/ Cattle ponds (nos)	Total Area	Estimated cost (Rs in Lakh)
Gabharu	25	5	7900	10	20	35	6500	-	27	1351	195.456
Balipara	25	5	8500	15	15	20	2500	10	20	1439	172.64
Dhekiajuli	10	20	1500	-	-	-	6500	-	-	918	280.56
Borchalla	25	5	4500	5	20	35	2500	-	27	1407	168.80
Bihaguri	20	5	3600	9	26	35	2500		20	1388.20	166.54
Rangapara	30	5	3800	10	20	35	6500		20	1480.60	177.632
Naduar	20	5	7500	9	25	35	15000		20	1451.00	206.60
Sootea	25	5	4500	6	20	35	6500		27	1465.00	175.76
Sakomatha	25	5	6200	10	20	35	3500		27	1489.40	178.688
Biswanath	30	5	5200	10	20	25	2500		20	1381.00	165.728
Baghmara	20	3	8200	7	25	25	2500		17	1144.40	137.328
Behali	25	3	7500	8	20	35	3500		20	1262.00	151.04
Choiduar	25	7	8200	10	20	35	4500		27	1688.00	203.30
Pub Choidura	25	6	6800	10	15	35	6500		20	1520.00	182.352
Total in District:	**330**	**84**	**83900**	**119**	**266**	**420**	**67000**	**10**	**292**	**19385.00**	**2562.536**

5.10 Expected Output and Outcome

As stated earlier the gross irrigated area in the district is 74174 hectare which is around 29.44% of 251721 hectare of the gross cropped area. Various departments of the district have proposed to bring additional 115639.5 hectares of land under irrigated cultivation system. Table below represents the target proposed by various department to bring additional land under irrigated cultivation through PMKSY.

Table 5-6: Component wise area in ha. to be contemplated for irrigation

Project Components	No	Contemplated Area (Ha)
AIBP		
Major IS Renovation	1	5330
Medium IS(New)	1	8880
Continuation of Ongoing Minor IS	14	2430
Har Khet Ko Pani		
New Minor IS	1831	50660
Renovation o Minor IS (Defunct/Partially Operative)	27	3529
Continuation of Centrally funded IS	7	930
Continuation of state planned IS	6	790
Per Drop More Crop	23070	23705.5
Watershed	-	19385
Total		**115639.5**

5.11 Conclusion

The following benefits are intended from the District Irrigation Plan.

1. A total of 115559.50 Hectares of Irrigation potential is proposed to be created under the four components of PMKSY. Thus, 70% of cultivable area would be brought under the command of assured irrigation. It would boost up the gross crop intensity significantly as the farmers would be able to go for multiple cropping sequences throughout the year.
2. Under AIBP component of PMKSY, the only major irrigation scheme in the district would be renovated to make fully it functional and the entire command area of 16470 may be made available by reviving the lost potential for utilization by the farmers. The CAD activities would also ensure effective water distribution amongst the beneficiary cultivators. A new medium irrigation project in the district would create an irrigation potential of 8800 Hectares in the Pub –chaiduar block where the existing irrigation coverage is very poor. Therefore, it would be a boon for the farmers of the area to multiply their crop production throughout the year. Moreover, 14 nos of

ongoing minor irrigation schemes would be completed creating an irrigation potential of 2430 Hectares.

3. Under the component 'Har Khet Ko Pani', 50660 Hectare of irrigation potential would be created by taking up 1831 nos of new minor irrigation schemes. Additional 5249 hectares of Irrigation potential would be created by completing the 7 nos of ongoing centrally funded, 6 nos of state funded and reviving the 27 nos of defunct/partially operative irrigation schemes in the district. Thus, the minor irrigation infrastructures in the district would be made fully functional and productive.
4. Under Per Drop More Crop, 23705.50 Hectares of irrigation potential would be created to ensure multiple cropping and agriculture efficiencies through precision irrigation technologies. Extensive trainings/awareness programs would be taken up to educate the farmers about the latest agricultural practices/technologies and adoption of scientific farming. This would make the rural economy to get boosted as the farmers would raise the production, develop market and thus socio economic status shall be uplifted making the state prosper further and further.
5. 19835 Hectares of cultivable area would be provided with irrigation facilities by taking up watershed activities in the district. Check dams, Water harvesting tanks, recharge tanks, nalla bunds, farm & cattle ponds etc would be constructed in different area benefitting the farmers of the localities. Cattle rearing, Agro based & other small scale industries would also be promoted. Waste area would be developed creating new irrigation water sources.

Thus, the overall economy of the district would get better and better in the days to come after the contemplated projects getimplemented and yield results in terms of enhanced crop production.

Annexure I : Area wise, crop wise irrigation status

Name of block : **Borsola**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	1256	10122	11378	-	-	-	4800		4800	6056	10122	16178	-	-	-
B) Coarse Cereals	30	357	387	33	287	320	-	-	-	63	644	707	-	-	-
C) Pulses	-	350	350	-	220	220	-	-	-	-	570	570	-	-	-
D) Oil Seeds	-	-	-	49	491	540	-	-	--	49	491	540			
E) Fibre	-	965	965	-	-	-	-	-	-	-	965	965			
F) Any other crops	32	514	546	252	606	858	-	-	-	284	1120	1404	122	1234	1356
Name of block : **Dhekiajul**i															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	4818	16200	21018	-	-	-	3130		3130	7948	16200	24148	-	-	-
B) Coarse Cereals	55	485	540	-	-	-	-	-	-	55	485	540	-	-	-
C) Pulses	-	240	240	-	1880	1880	-	-	-	-	2360	2360	-	-	-
D) Oil Seeds	-	-	-	507	1602	2109	-	-	--	507	1602	2109			
E) Fibre	-	121	121	-	-	-	-	-	-	-	121	-			
F) Any other	-	1190	1190	2687	1823	4515	-	-	-	2687	3018	5705	-	187	187

crops															
Name of block : **Bihaguri**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	489	5284	5773	-	-	-	270		270	759	5284	6043	-	-	-
B) Coarse Cereals	-	56	56	-	56	56	-	-	-	-	112	112	-	-	-
C) Pulses	-	35	35	9	32	41	-	-	-	9	67	76	-	-	-
D) Oil Seeds	-	-	-	57	1093	1150	-	-	--	57	1093	1150			
E) Fibre	-	22	22	-	-	-	-	-	-	-	22	22			
F) Any other crops	-	630	630	333	1182	1515	-	-	-	333	1182	1515	22	1453	1475
Name of block : **Gabharu**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	2315	3950	6265	-	-	-	2300		2300	4615	3950	8565	-	-	-
B) Coarse Cereals	-		-			-			-	-		-	-	-	-
C) Pulses	-		-			-			-	-		-		-	-
D) Oil Seeds	-	-	-	150	1300	1450	-	-	--	150	1300	1450			
E) Fibre	-	580	580	-	-	-	-	-	-	-	580	580			
F) Any other crops	150		1108	573	1199	1772	-	-	-	723	2157	2880	175	1149	1324

Name of block : **Balipara**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	2587	7493	10080	-	-	-	2775	0	2775	5362	7493	12855	-	-	-
B) Coarse Cereals	-		-			-			-	-		-	-	-	-
C) Pulses	-	450	450	175	645	820			-	175	1095	1270		-	-
D) Oil Seeds	-	-	-	185	1315	1500	-	-	--	150	1300	1450			
E) Fibre	-	260	260	-	-	-	-	-	-	-	260	260			
F) Any other crops	-	880	880	1085	365	1245	-	-	-	1085	1040	2125	105	1070	1175
Name of block : **Rangapara**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	277	1123	1400	-	-	-	-	-	-	277	1123	1400	-	-	-
B) Coarse Cereals	-		-			-			-	-		-	-	-	-
C) Pulses														-	-
D) Oil Seeds	-	-	-	285	1615	1900	-	-	--	285	1615	1900			
E) Fibre	-	-	-	-	-	-	-	-	-	-	-	-			
F) Any other crops	-	70	70	1487	509	1996	-	-	-	1487	476	2066	103	2170	2273
Name of block : **Sootea**															
Crop	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation		

Type													crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	771	7994	8765	-	-	-	2009		2009	2780	7994	10774	-	-	-
B) Coarse Cereals	-		-		260	260			-	-	260	260	-	-	-
C) Pulses	-			12	312	324				12	312	324		-	-
D) Oil Seeds				45	1235	1280				45	1235	1280			
E) Fibre		726	726								726	726			
F) Any other crops	-	500	500	1050	3365	4415				1050	3865	4915	49	847	896
Name of block : **Sakomatha**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	2308	3385	5693	-	-	-	420		420	2728	3385	6113	-	-	-
B) Coarse Cereals	-		-						-	-			-	-	-
C) Pulses	-			59	241	300				59	241	300		-	-
D) Oil Seeds				33	227	260				33	227	260			
E) Fibre		726	726												
F) Any other crops	-	400	400	895	210	1105				895	610	1505	305	1638	1943
Name of block : **Baghmara**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total

A) Cereals	1438	6485	7923	-	-	-	150		150	1588	6485	8073		-	-
B) Coarse Cereals	-		-	22	78	100			-	-22	78	100	-	-	-
C) Pulses	-			125	375	500				125	375	500		-	-
D) Oil Seeds															
E) Fibre															
F) Any other crops	-	300	300	2280	820	3100				2280	1120	3400	115	350	465
Name of block : **Behali**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	305	6082	6387	-	-	-	1320		1320	1625	6082	7707		-	-
B) Coarse Cereals	-		-	60	410	470				60	410	470		-	-
C) Pulses	-			15	80	95				15	80	95		-	-
D) Oil Seeds				22	120	142				22	120	142			
E) Fibre															
F) Any other crops	-	180	180	1932	854	2786				1932	1034	2966	58	426	484
Name of block : **Biswanath**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	1195	4775	5976	-	-	-	482		482	1677	4775	6452	-	-	-

B) Coarse Cereals	-		-						-	-			-	-	-
C) Pulses	-			296	691	987				296	691	987		-	-
D) Oil Seeds				41	101	145				41	101	145			
E) Fibre		726	726												
F) Any other crops	-	472	472	1335	1362	2697				1335	1834	3169	201	1715	1916
Name of block : **Pub -chaiduar**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	1250	17743	18993	-	-	-	4154		4154	5404	17743	23147	-	-	-
B) Coarse Cereals	-		-						-	-			-	-	-
C) Pulses	-			35	1865	1900				35	1865	1900			
D) Oil Seeds				125	2075	2200				125	2075	2200			
E) Fibre															
F) Any other crops	--	315	315	435	1165	1600				435	1480	1915	102	1162	1264
Name of block : **Chaiduar**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	112	13901	14013	-	-	-	1446		1446	1558	13901	15459	-	-	-
B) Coarse	-		-						-	-			-	-	-

Cereals															
C) Pulses	-			153	1277	1430				153	1277	1430		-	-
D) Oil Seeds				129	1051	1180				129	1051	1180			
E) Fibre															
F) Any other crops	--	290	290	845	570	1415				845	860	1705	195	1873	2068
Name of block : **Naduar**															
Crop Type	Kharif (area in Ha)			Rabi (Area in Ha)			Summer crop (Area in Ha)			Total (Area in Ha)			Horticulture & Plantation crops (Area in Ha)		
	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total
A) Cereals	8100	4929	13029				1262		1262	9290	5001	14291			-
B) Coarse Cereals	-			96	426	522				96	426	522			-
C) Pulses	-			178	597	775				178	597	775			-
D) Oil Seeds				817	3283	3600				817	2783	3600			
E) Fibre		413	413								413	413			
F) Any other crops	--	275	275	1405	190	1595				1405	465	1870	309	2300	2609

Annexure II : Production and Productivity of major crops

Name of the Block: **Naduar**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**

						crops											
A.Kharif	13029				413	275	5204	183441	3525	55880	8100	342630	4230	59000	526071	3877	57440
B.Rabi		422	775	3600		1595	4496	131283	2920	39075	2496	90854	3640	41130	22137	3280	40102
C.Summer	1262										1262	66225	5250	57075	66225	5250	57075
D.Horticulture & Plantation							2300	253000	11000	125000	309	40170	13000	140000	293170	12000	132500
Total	14291	422	775	3600	413	1870	12000	567724			12167	539909			1107633		
Name of the Block: **Chaiduar**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**
A.Kharif	14013					290	14191	501651	3535	55870	112	4760	4250	59000	506411	3892	57435
B.Rabi			1430	1180		1415	2898	84476	2915	39070	1127	41022	3640	41130	125498	3277	40100
C.Summer	1446										1446	76059	5260	57075	76059	5260	57075
D.Horticulture & Plantation							1873	205030	11000	125000	195	25350	13000	140000	231380	12000	132500
Total	15459		1430	1180		1705	18962	792157			2880	147191			939348		
Name of the Block:**Pub-Chaiduar**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**

						crops											
A.Kharif	18993					315	17743	624553	3520	55880	1250	52875	4230	59000	677428	3875	57440
B.Rabi			1900	2200		1600	5105	148555	2910	39072	595	21646	3638	41128	170201	3274	40100
C.Summer	4154										4154	218209	5253	57073	218209	5253	57073
D.Horticulture & Plantation							1162	127820	11000	125000	102	13260	13000	140000	141080	12000	132500
Total	23147		1900	2200		1915	24010	900928			6101	305990			1206918		
Name of the Block:**Behali**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**
A.Kharif	6387					180	6262	221048	3530	55725	305	12916	4235	59000	233964	3882	57362
B.Rabi		470	95	142		2786	1464	42602	2910	39072	2029	73815	3638	41228	116417	3274	40100
C.Summer	1320										1320	69412	5260	57075	69432	5260	57075
D.Horticulture & Plantation							426	46860	11000	125000	58	7540	13000	140000	54400	12000	132500
Total	7707	470	95	142		2966	8152	310510			3712	163703			474213		
Name of the Block:**Biswanath**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**

						crops											
A.Kharif	5970					472	5247	186268	3550	55880	1195	51385	4300	59000	237653	3925	57440
B.Rabi			987	145		2697	2154	62681	2910	39050	1672	60777	3635	41130	123458	3272	40090
C.Summer	482										482	25305	5250	57080	25305	5250	57080
D.Horticulture & Plantation							1715	188650	11000	125000	201	26130	13000	140000	214780	12000	132500
Total	5452		987	145		3169	9641	437594			3550	163597			601196		
Name of the Block:**Baghmara**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**
A.Kharif	7923					300	6785	239510	3530	55800	1438	61978	4310	58950	301488	3920	57400
B.Rabi		100	500			3100	1273	37299	2930	39070	2427	90284	3720	41150	127583	3325	40110
C.Summer	150										150	7875	5250	57110	7875	5250	57110
D.Horticulture & Plantation							350	38675	11050	125000	115	15007	13050	140000	53682	12059	132500
Total	**8073**	**100**	**500**			**3400**	**8408**	**315484**			**4130**	**175144**			**490628**		
Name of the Block:**Sakomatha**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**

A.Kharif	5693					400	3785	132475	3500	55850	2308	96936	4200	58900	229411	3850	57375
B.Rabi			300	260		895	678	19865	2930	39070	987	35779	3625	41130	55644	3277	40100
C.Summer	420										420	22050	5250	57075	22050	5250	57075
D.Horticulture & Plantation							1638	1801800	11000	125000	305	39650	13000	140000	1841450	120000	132500
Total	**6113**		**300**	**260**		**1295**	**6101**	**1954140**			**4020**	**194415**			**2148555**		
Name of the Block:**Sootea**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**
A.Kharif	8765				726	500	9220	324730	3522	55873	771	32586	4226	59000	357316	2583	57436
B.Rabi		260	324	1280		4415	5172	150505	2910	39072	1107	40273	40273	41128	190778	3274	40100
C.Summer	2009							-			2009	105533	105533	57073	105533	5253	57073
D.Horticulture & Plantation							847	93170	11000	125000	49	6370	6310	140000	99540	12000	132500
Total	**10774**	**260**	**324**	**1280**	**726**	**4915**	**15239**	**568405**			**2966**	**184762**			**753167**		
Name of the Block:**Balipara**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**
A.Kharif	10080		450		260	880	1330	46949	3530	55870	2587	109430	4230	59000	156379	3880	57435

B.Rabi			820	1500		1245	2325	67657	2910	39075	1445	52564	3638	41130	120226	3274	40102
C.Summer	2775										2775	145687	5250	57050	145687	5250	57050
D.Horticulture & Plantation							1070	117700	11000	125000	105	13650	13000	140000	131350	12000	132500
Total	**12855**		**1270**	**1500**	**260**	**2125**	**4725**	**232306**			**6912**	**321336**			**553642**		
Name of the Block:**Bihaguri**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**
A.Kharif	5773	56	35	-	22	630	6027	212270	3522	55873	489	20665	4226	59000	232935	3874	57436
B.Rabi	_	56	41	1150	_	1515	2363	68763	2910	39072	399	14515	3638	41128	83278	3274	40100
C.Summer	270										270	14183	5253	57073	14183	5253	57073
D.Horticulture & Plantation							1453	159830	11000	125000	22	2860	13000	140000	142690	12000	132500
Total	**6043**	**112**	**76**	**1150**	**22**	**2145**	**9840**	**440863**			**1180**	**52223**			**473086**		
Name of the Block:**Rangapara**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**
A.Kharif	1400					70	1193	42112	3530	55870	277	11717	4230	59000	53829	53829	57435
B.Rabi				190		199	212	62020	2920	39075	177	64678	3650	41150	126698	126698	40112

				0		6	4				2					
C.Summer	0						0				0					
D.Horticulture & Plantation							2170	238700	11000	125000	103	13390	13000	140000	252090	252090	132500
Total	**1400**			**1900**		**2066**	**5487**	**342832**			**2152**	**89785**				**432617**	
Name of the Block:**Dhekiajuli**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	Cost of Cultivation on (Rs.Ha)
A.Kharif	21018	540	240		121	1190	18236	642271	3522	55873	4873	205932	4226	59000	848203	5874	57436
B.Rabi			1880	2109		4515	8504	247466	2910	39072	3194	116197	3638	41128	363663	3274	40100
C.Summer	3130										3130	164418	5253	57073	164418	5273	57073
D.Horticulture & Plantation							187	20570	11000	125000	187	24310	13000	140000	44880	12000	132500
Total	**24148**	**540**	**2120**	**2109**	**121**	**5705**	**26727**	**910307**			**11197**	**510857**			**1421164**		
Name of the Block:**Gabharu**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**
A.Kharif	6265				580	1108	5488	193177	3520	55870	2465	104023	4220	59000	297200	3870	57435
B.Rabi				1450		1772	2499	72720	2910	39070	723	26302	3638	41130	99022	3274	40100

C.Summer	2300										2300	120819	5253	57073	120819	5253	57073
D.Horticulture & Plantation							1149	126390	11000	125000	175	22750	13000	140000	149140	12000	132500
Total	**6265**			**1450**	**580**	**2880**	**8686**	**392287**			**5663**	**273894**			**666181**		
Name of the Block:**Borsola**																	
Season	**Crop sown**						**Rainfed**				**Irrigated**				**Total**		
	Cereals	**Coarse Cereals**	**Pulses**	**Oil Seeds**	**Fibre**	**Any other crops**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Area (Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**	**Production (qtn/yr)**	**Productivity or yield (Kgs/ha)**	**Cost of Cultivation on (Rs.Ha)**
A.Kharif	11378	387	350	-	965	546	12308	434472	3530	55870	1318	55751	4230	59000	470223	3880	57435
B.Rabi		320	220	540		858	1604	46917	2925	39075	334	12157	3640	41130	59074	3282	40102
C.Summer	4800										4800	252000	5250	57075	252000	5250	57075
D.Horticulture & Plantation							1234	135740	11000	125000	122	15860	13000	140000	151600	12000	132500
Total	**16178**	**707**	**570**	**540**	**965**	**1404**	**15146**	**617124**			**6574**	**315768**			**932897**		

Annexure III: Status of Water Availability

Block:Dhekiajuli					
BCM per ha					
Sl. No.	Sources	Kharif	Rabi	Summer	Total(in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)	0.0018	-	-	0.0018
iii)	Lift Irrigation/Diversion				

iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well (1 no)	0.00006	0.00006	0.00006	0.00018
iii)	Medium tube well				
iv)	Shallow Tube well (**2412** nos)	0.007236	0.007236	0.007236	0.021708
Total :					**0.023688**
Block:Borsola					
BCM per ha					
Sl. No.	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)	0.005	--	--	0.005
iii)	Lift Irrigation/Diversion				
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well (1 no)	0.00006	0.00006	0.00006	0.00018
iii)	Medium Tube well				
iv)	Shallow Tube well (683 nos)	0.002	0.002	0.002	0.008
Total :					**0.00998**
Block:Bihaguri					
BCM per ha					
Sl. No.	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)	0.00084	--	--	0.00084
iii)	Lift Irrigation/Diversion				
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				

vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well (2 no)	0.00009	0.00009	0.00009	0.00027
iii)	Medium Tube well				
iv)	Shallow Tube well (262 nos)	0.000786	0.000786	0.000786	0.002358
Total :					**0.00347**
Block:Balipara					
BCM per ha					
Sl. No.	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)	0.00045	--	--	0.00045
iii)	Lift Irrigation/Diversion				
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well (4 no)	0.00024	0.00024	0.00024	0.00072
iii)	Medium Tube well				
iv)	Shallow Tube well (1888 Nos)	0.005664	0.005664	0.005664	0.016992
Total :					**0.018162**
Block:Gabharu					
Sl.	Sources	Kharif	Rabi	Summer	Total (in BCM)
	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)	-	--	--	-
iii)	Lift Irrigation/Diversion (1 No)	0.00018	0.00018	0.00018	0.00054
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				

ii)	Deep Tube well (1 no)	0.00006	0.00006	0.0006	0.00018
iii)	Medium Tube well				
iv)	Shallow Tube well (1736Nos)	0.0025	0.0025	0.0025	0.01
		Total :			**0.00822**
Block: Rangapara					
S No	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)	-	--	--	-
iii)	Lift Irrigation/Diversion (1 No)				
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well				
iii)	Medium Tube well				
iv)	Shallow Tube well (538 Nos)	0.001614	0.001614	0.001614	0.004842
		Total :			**0.00484**
Block: Naduar					
BCM per ha					
Sl. No.	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)	0.01215			0.01215
ii)	Minor Irrigation scheme	-	--	--	-
iii)	Lift Irrigation/Diversion				
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well				
iii)	Medium Tube well				
iv)	Shallow Tube well (1260 Nos)	-	0.00378	0.00378	0.00756

		Total :			**0.01971**
Block: Sootea					
BCM per ha					
Sl. No.	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)	0.003324			0.003324
ii)	Minor Irrigation scheme (FIS)	-	--	--	-
iii)	Lift Irrigation/Diversion (4 Nos)	0.000945	0.000945	0.000945	0.002835
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well (1 No)	0.00006	0.00006	0.00006	0.00018
iii)	Medium Tube well				
iv)	Shallow Tube well (584 Nos)	0.001752	0.001752	0.001752	0.005256
		Total :			**0.011595**
Block: Biswanath					
BCM per ha					
Sl. No.	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)	0.0015	--	--	0.0015
iii)	Lift Irrigation/Diversion (1 no/augmemted)	0.00057	0.00057	0.00057	0.00171
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well				
iii)	Medium Tube well				
iv)	Shallow Tube well (445Nos)	0.001335	0.001335	0.001335	0.004005
		Total :			**0.007215**
Block:Sakomatha					
BCM per ha					
S no	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				

i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)	0.008025	-	-	0.008025
iii)	Lift Irrigation/Diversion				
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well (2 nos)	0.00006	0.00006	0.00006	0.00018
iii)	Medium Tube well				
iv)	Shallow Tube well (274 Nos)	-	0.000822	0.000822	0.001644
Total :					0.00984
Block:Baghmara					
BCM per ha					
S no.	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)	0.0036	0.001	0.001	0.0056
iii)	Lift Irrigation/Diversion				
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well				
iii)	Medium Tube well				
iv)	Shallow Tube well (430 Nos)	0.00129	0.00129	0.00129	0.00387
Total :					**0.00947**
Block:Behali					
BCM per ha					
Sl. No.	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				

ii)	Minor Irrigation scheme (FIS)	0.000495	-	-	0.000495
iii)	Lift Irrigation/Diversion				
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well (1 no)	0.00006	0.00006	0.00006	0.00018
iii)	Medium Tube well				
iv)	Shallow Tube well (798 Nos)	0.002394	0. .002394	0. .002394	0.007182
Total :					**0.00786**
Block:Chaiduar					
BCM per ha					
S no	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				
ii)	Minor Irrigation scheme (FIS)				
iii)	Lift Irrigation/Diversion				
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well (1 no)	0.000045	0.000045	0.000045	0.000135
iii)	Medium Tube well				
iv)	Shallow Tube well (600 Nos)	0.0018	0. .0018	0. .0018	0.0054
Total :					**0.00554**
Block:Pub- chaiduar					
BCM per ha					
Sl. No.	Sources	Kharif	Rabi	Summer	Total (in BCM)
1	Surface Irrigation				
i)	Canal (Major & Medium Irrigation)				

ii)	Minor Irrigation scheme (FIS)	0.000045			0.000045
iii)	Lift Irrigation/Diversion	0.00045	0.00045	0.00045	0.00135
iv)	Various Water Bodies including Rain Water Harvesting				
v)	Treated Effluent received from STP				
vi)	Untreated Effluent				
vii)	Perennial sources of water				
2	Ground Water				
i)	Open well				
ii)	Deep Tube well (3 nos)	0.000135	0.000135	0.000135	0.000405
iii)	Medium Tube well				
iv)	Shallow Tube well (660 Nos)	0.00198	0. .00198	0. .00198	0.00594
Total :					**0.00774**

Annexure IV : Status of Command Area

Name of the Block: Naduar									
Name of Scheme :- Bordikarai Irrigation Scheme								Area in Ha	
Sl. No.	Name of the Village	Information of canal command			Information on the other Services Command			Total Area	
		Total Area	Developed Area	Undeveloped Area	Total Area	Developed Area	Undeveloped Area	Developed Command	Undeveloped Area
	Nandikeswar.	100	30	70	NIL	NIL	NIL	30	70
	Dhubikata.	150	40	110	NIL	NIL	NIL	40	110
	Sonapur (No.2 Balijuri).	160	NIL	160	NIL	NIL	NIL	NIL	160
	No. 1 Tajalpati.	180	30	150	NIL	NIL	NIL	30	150
	Madhya Balijuri.	160	NIL	160	NIL	NIL	NIL	NIL	160
	Majgaon.	150	NIL	150	NIL	NIL	NIL	NIL	150
	Bakula.	86	40	46	NIL	NIL	NIL	40	46
	Bangaligaon.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Rampur	80	50	30	NIL	NIL	NIL	50	30
	Baliati.	80	NIL	80	NIL	NIL	NIL	NIL	80

	No. 1 Chaibari.	120	NIL	120	NIL	NIL	NIL	NIL	120
	No. 2 Chaibari.	100	NIL	100	NIL	NIL	NIL	NIL	100
	No. 1 Barpathar.	80	NIL	80	NIL	NIL	NIL	NIL	80
	No. 2 Barpathar.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Murhadal.	270	NIL	270	NIL	NIL	NIL	NIL	270
	Majgaon.	45	NIL	45	NIL	NIL	NIL	NIL	45
	Uparkuri.	120	NIL	120	NIL	NIL	NIL	NIL	120
	Dhalaibil.	90	NIL	90	NIL	NIL	NIL	NIL	90
	Matigaon.	80	NIL	80	NIL	NIL	NIL	NIL	80
	Bargaon.	90	NIL	90	NIL	NIL	NIL	NIL	90
	Boimara.	80	NIL	80	NIL	NIL	NIL	NIL	80
	Morisuti.	150	90	60	NIL	NIL	NIL	90	60
	Ajanguri.	85	NIL	85	NIL	NIL	NIL	NIL	85
	Dikarai.	195	90	105	NIL	NIL	NIL	90	105
	Barmah	50	NIL	50	NIL	NIL	NIL	NIL	50
Name of the Block: Sootea									
Name of Scheme :- Bordikarai Irrigation Scheme								Area in Ha	
Sl. No.	Name of the Village	Information of canal command			Information on the other Services Command			Total Area	
		Total Area	Developed Area	Undeveloped Area	Total Area	Developed Area	Undeveloped Area	Developed Command	Undeveloped Area
	Hajong Gaon.	65	NIL	65	NIL	NIL	NIL	NIL	65
	Tajalpati.	120	20	100	NIL	NIL	NIL	20	100
	Jaishidhi.	180	40	140	NIL	NIL	NIL	40	140
	Tanga Basti.	130	NIL	130	NIL	NIL	NIL	NIL	130
	Madhupur.	150	NIL	150	NIL	NIL	NIL	NIL	150
	Jaipur.	120	NIL	120	NIL	NIL	NIL	NIL	120
	Santipur Balijan.	170	40	130	NIL	NIL	NIL	40	130
	Balijan No. 2.	150	30	120	NIL	NIL	NIL	30	120
	Dinik Phkhuri.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Samaguri.	110	NIL	110	NIL	NIL	NIL	NIL	110
	Amaraguri.	120	NIL	120	NIL	NIL	NIL	NIL	120
	Patar Basti.	150	NIL	150	NIL	NIL	NIL	NIL	150
	Bajor Hola.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Mudoi Gaon.	80	NIL	80	NIL	NIL	NIL	NIL	80
	Barpam.	100	NIL	100	NIL	NIL	NIL	NIL	100

	Jyotibari.	50	NIL	50	NIL	NIL	NIL	NIL	50
	Militeri Block.	120	NIL	120	NIL	NIL	NIL	NIL	120
	Nijarapar.	80	NIL	80	NIL	NIL	NIL	NIL	80
	Bishnupur.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Itakhola.	160	NIL	160	NIL	NIL	NIL	NIL	160
	Danga Basti.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Sadaipara.	170	NIL	170	NIL	NIL	NIL	NIL	170
	Habidaloni.	100	NIL	100	NIL	NIL	NIL	NIL	100
	Kalbasti.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Bajgaon.	295	NI	295	NIL	NIL	NIL	NIL	295
Name of the Block: Sootea									
Name of Scheme :- Bordikarai Irrigation Scheme								Area in Ha	
Sl. No.	Name of the Village	Information of canal command			Information on the other Services Command			Total Area	
		Total Area	Developed Area	Undeveloped Area	Total Area	Developed Area	Undeveloped Area	Developed Command	Undeveloped Area
	Santipur.	180	NIL	180	NIL	NIL	NIL	NIL	180
	Barabhuyan.	120	NIL	120	NIL	NIL	NIL	NIL	120
	Sangamari.	160	NIL	160	NIL	NIL	NIL	NIL	160
	Bebejia.	170	NIL	170	NIL	NIL	NIL	NIL	170
	Solalsonari.	160	30	130	NIL	NIL	NIL	30	130
	Nagsangkar.	130	NIL	130	NIL	NIL	NIL	NIL	130
	Santipur Balijan.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Tangarajar.	80	NIL	80	NIL	NIL	NIL	NIL	80
	Metera.	120	NIL	120	NIL	NIL	NIL	NIL	120
	Silabandha.	80	NIL	80	NIL	NIL	NIL	NIL	80
	No. 1 Balijan.	90	NIL	90	NIL	NIL	NIL	NIL	90
	Valuguri.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Nagpur.	60	NIL	60	NIL	NIL	NIL	NIL	60
	Pub Valuguri.	90	NIL	90	NIL	NIL	NIL	NIL	90
	Khapekhati.	120	NIL	120	NIL	NIL	NIL	NIL	120
	Magurmora.	90	NIL	90	NIL	NIL	NIL	NIL	90
	Diplonga	120	NIL	120	NIL	NIL	NIL	NIL	120
	Saiyatinga	50	NIL	50	NIL	NIL	NIL	NIL	50
	Hokajan.	150	NIL	150	NIL	NIL	NIL	NIL	150
	Solohola.	120	NIL	120	NIL	NIL	NIL	NIL	120

	Sologuri.	350	NIL	350	NIL	NIL	NIL	NIL	350
	Uparkuri.	200	NIL	200	NIL	NIL	NIL	NIL	200
	Barhampur.	380	NIL	380	NIL	NIL	NIL	NIL	380
	Neyar Basti.	170	NIL	170	NIL	NIL	NIL	NIL	170
	Pachi Gaon.	260	N	260	NIL	NIL	NIL	NIL	260
Name of the Block: Sootea									
Name of Scheme :- Bordikarai Irrigation Scheme								Area in Ha	
Sl. No.	Name of the Village	Information of canal command			Information on the other Services Command			Total Area	
		Total Area	Developed Area	Undeveloped Area	Total Area	Developed Area	Undeveloped Area	Developed Command	Undeveloped Area
	Dekasundar.	260	NIL	260	NIL	NIL	NIL	NIL	260
	Padmapur.	60	NIL	60	NIL	NIL	NIL	NIL	60
	Panigaon.	200	NIL	200	NIL	NIL	NIL	NIL	200
	Dighalputa.	70	NIL	70	NIL	NIL	NIL	NIL	70
	Gereluachuk.	140	NIL	140	NIL	NIL	NIL	NIL	140
	Koch Gaon.	120	NIL	120	NIL	NIL	NIL	NIL	120
	Satial Gaon.	180	NIL	180	NIL	NIL	NIL	NIL	180
	Sonaguri.	160	NIL	160	NIL	NIL	NIL	NIL	160
	Baruah Chuk	20	NIL	20	NIL	NIL	NIL	NIL	20
	Margar Basti	150	145	5	NIL	NIL	NIL	145	5
	Samdhara	250	244	6	NIL	NIL	NIL	244	6
	Maranakuri	160	155	5	NIL	NIL	NIL	155	5

Annexure V : Existing types of Irrigation

Name of the Block: **Borsola**																	
Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4)	Diesel pump(5)	Others (6)	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt. Canal	Community/ Pvt. Canal	Community pond includin	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.					LLP		

			g small															
No.	1	NA	NA	NA	NA	683	NA	NA	NA	1	NA	1	-	-	-	35	685	35
Command Area (Hect.)	1200	NA	NA	NA	NA	1366	NA	NA	NA	40	NA	2	-	-		70	2568	70

Name of the Block: **Dhekiajuli**

Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4)	Diesel pump(5)	Others (6) LLP	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt. Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.							
No.	3	NA	NA	NA	NA	2412	NA	NA	NA	3	NA	NA	-	-	-	125	2419	125
Command Area	900	NA	NA	NA	NA	4824	NA	NA	NA	120	NA	NA	-	-		250	5844	250

Name of the Block: **Bihaguri**

Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4)	Diesel pump(5)	Others (6) LLP	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt. Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.							
No.	1	NA	NA	NA	NA	262	NA	NA	NA	2	NA	NA	-	-	-	-	265	-
Command Area (Hect.)	500	NA	NA	NA	NA	524	NA	NA	NA	60	NA	NA	-	-		-	1084	-

Name of the Block: **Gabharu**

Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4) ELIS (surface lift)	Diesel pump (5)	Others (6) LLP	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt Canal	Community/Pvt. Canal	Community pond including small	Individual/Pvt. Ponds	Govt. Reservoir/ Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.							
No.	-	NA	NA	NA	NA	1736	NA	NA	NA	1	NA	NA	-	1	-	-	1737	1
Command Area (Hect.)	-	NA	NA	NA	NA	3472	NA	NA	NA	40	NA	NA	-	120		-	3512	120

Name of the Block: **Rangapara**

Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4) ELIS (surface lift)	Diesel pump(5)	Others (6) LLP	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.							
No.	-	NA	NA	NA	NA	538	NA	NA	NA	-	NA	NA	-	-	-	5	538	5
Command Area (Hect.)	-	NA	NA	NA	NA	1076	NA	NA	NA	-	NA	NA	-	-		10	1076	10

Name of the Block: **Balipara**																		
Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4)	Diesel pump(5)	Others (6)	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.			ELIS (surface lift)		LLP		
No.	1	NA	NA	NA	NA	1888	NA	NA	NA	4	NA	2	-	-	-	5	1895	5
Command Area (Hect.)	300	NA	NA	NA	NA	3776	NA	NA	NA	160	NA	4	-	-		10	4240	10
Name of the Block: **Naduar**																		
Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4)	Diesel pump(5)	Others (6)	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.			ELIS (surface lift)		LLP		
No.	1	NA	NA	NA	NA	1260	NA	NA	NA	-	NA	NA	-	-	-	10	1261	10
Command Area (Hect.)	11140	NA	NA	NA	NA	2520	NA	NA	NA	-	NA	NA	-	-		120	13660	120
Name of the Block: **Sootea**																		
Source of Irrigati	Surface Irrigation (1)					Ground Water (2)						Other sources includin	Treated efficient	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube		Open Wells		Bore				Electric	Diesel	Others	Irrigati	Water

on				Well			Well	g Traditional WHS (3)	discharged from STP	ity pump (4)	pump(5)	(6)	on sources (1+2+3)	extracting units (4+5+6)
	Govt Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.			ELIS (surface lift)		LLP		
No.	1	NA	NA	NA	NA	584	NA	NA	NA	1	NA	5	NA	2	-	10	590	12
Command Area (Hect.)	50	NA	NA	NA	NA	1168	NA	NA	NA	40	NA	150	NA	630		20	1408	650
Name of the Block: **Biswanath**																		
Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4)	Diesel pump(5)	Others (6)	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt. Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.			ELIS (surface lift)		LLP		
No.	1	NA	NA	NA	NA	445	NA	NA	NA	3	NA	NA	-	2	-	20	449	22
Command Area (Hect.)	600	NA	NA	NA	NA	890	NA	NA	NA	120	NA	NA	-	300		40	1610	340
Name of the Block: **Sakomatha**																		
Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional	Treated efficient discharged	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4)	Diesel pump (5)	Others (6)	Irrigation sources	Water extracting units

											WHS (3)	from STP	ELIS			(1+2+3)	(4+5+6)
	Govt. Canal	Community/Pvt. Canal	Community pond including small	Individual /Pvt. Ponds	Govt. Reservoir/ Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.			(surface lift)		LLP		
No.	4	NA	NA	NA	NA	274	NA	NA	NA	2	NA	NA	-	-	-		280	-
Command Area (Hect.)	5350	NA	NA	NA	NA	548	NA	NA	NA	40	NA	NA	-	-			5938	-
Name of the Block: **Baghmara**																		
Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4)	Diesel pump (5)	Others (6)	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt. Canal	Community/Pvt. Canal	Community pond including small	Individual /Pvt. Ponds	Govt. Reservoir/ Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.			ELIS (surface lift)		LLP		
No.	3	NA	NA	NA	NA	430	NA	NA	NA	-	NA	NA	-	-	-	-	433	-
Command Area (Hect.)	2400	NA	NA	NA	NA	860	NA	NA	NA		NA	NA	-	-		-	3260	-
Name of the Block: **Behali**																		
Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity	Diesel pump(	Others (6)	Irrigation	Water extracti

											Traditional WHS (3)	ged from STP	pump (4)	5)		sources (1+2+3)	ng units (4+5+6)
	Govt. Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.			ELIS (surface lift)		LLP		
No.	1	NA	NA	NA	NA	798	NA	NA	NA	1	NA	NA	-	-	-	-	800	-
Command Area (Hect.)	330	NA	NA	NA	NA	1596	NA	NA	NA	40	NA	NA	-	-		-	1966	-
Name of the Block: **Pub chaiduar**																		
Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4) ELIS (surface lift)	Diesel pump(5)	Others (6) LLP	Irrigation sources (1+2+3)	Water extracting units (4+5+6)
	Govt. Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.							
No.	1	NA	NA	NA	NA	660	NA	NA	NA	3	NA	NA	-	-	-	-	664	-
Command Area (Hect.)	30	NA	NA	NA	NA	1320	NA	NA	NA	90	NA	NA	-	-		-	1440	-
Name of the Block:C**haiduar**																		
Source of Irrigation	Surface Irrigation (1)					Ground Water (2)						Other sources including Traditional WHS (3)	Treated efficient discharged from STP	Water extraction devices/Lift			Total	
	Canal Based		Tanks/ Ponds/ Reservoirs			Tube Well		Open Wells		Bore Well				Electricity pump (4) ELIS	Diesel pump(5)	Others (6)	Irrigation sources (1+2+3)	Water extracting units (4+5+6)

	Govt. Canal	Community/ Pvt. Canal	Community pond including small	Individual/ Pvt. Ponds	Govt. Reservoir/Dams	Govt.	Pvt.	Community/ Govt.	Pvt.	Govt.	Pvt.			(surface lift)		LLP		
No.	-	NA	NA	NA	NA	600	NA	NA	NA	1	NA	1	-	-	-	15	602	15
Command Area (Hect.)	-	NA	NA	NA	NA	1200	NA	NA	NA	30	NA	1	-	-		30	1231	30

Annexure VI : Strategic Action Plan for irrigation in District under PMKSY- AIBP

Sl. No.	Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (Rs in lakh.)
1	Pub chaiduar	MoWR	**AIBP**	Medim Irrigation (**Buroi FIS**) - **new**	1	8800	4 years	**22000.00**
2	Naduar & Sootea blocks	MoWR	**AIBP**	Major Irrigation- (**Renovation/Augmentation, of Bordikorai FIS**)	1	16994 (Available IP=11140 Ha, IP to be restored=**5330** Ha)	4 years	**12633.80**
3	Biswanath	MoWR	**AIBP**	Surface Minor Irrigation (**Continuation of Ongoing Schemes**)	2	900 (Balance IP=**500**)	1 year	220.492
4	Sootea	MOWR	**AIBP**	-do-	3	900 (Balance IP=**600**)	1 year	279.057
5	Baghmara	MOWR	**AIBP**	-do-	1	**300** (Balance IP=300**)**	1 year	19.63
6	Pubchaiduar	MOWR	**AIBP**	-do-	1	300 (Balance IP=0)	1 year	52.19
7	Balipara	MOWR	**AIBP**	-do-	1	800(Balance IP=500)	1 year	89.80
8	Bihaguri	MOWR	**AIBP**	-do-	1	600(Balane IP =100)	1 year	554.33
9	Gabharu	MOWR	**AIBP**	-do-	2	430(Balance IP =430)	1 year	220.207
10	Borsola	MOWR	**AIBP**	-do-	1	1200	-	55.45
11	Dhekiajuli	MOWR	**AIBP**	-do-	2	1584	-	249.785

				Total:	**16 (New-1, Renovation -1, Continuation of ongoing minor irrigationschemes-14)**	24008 Ha. **(To be created under PMKSY : New: 8800 Ha Renovation::5330H Continuation:2430H Total = 16560 H)**		**36374.741**

Annexure VII : Strategic Action Plan for irrigation in District under PMKSY- Har Khet Ko Pani

I. New Schemes:							
Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity (cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (Rs in Lakh.)
Chaiduar	MOWR	Hark het ko pani	Surface Flow (minor)	18	2550	5	5100
			Lift Irrigation				
		(new Schemes)	Ground Water Development				
			(deep tube wells)				
				216	4320	5	10800
			RRR of Water Bodies	-	-	-	-
			Construction of Field Channels				
			Lined Field Channels				
			Unlined Field Channels				
			Micro Irrigation	30	150	5	300

			Total :	**264**	**7020**		**16200**
Pubchaiduar	MOWR	Hark het ko pani	Surface Flow (minor)	1	50	5	125
			Lift Irrigation	1	40	5	60
		(new Schemes)	Ground Water Development	121	3630	5	7260
			(**deep tube wells**)				
			RRR of Water Bodies	-	-	-	-
			Total :	**124**	**3720**	**-**	**7445**
	Department						
Behali	MOWR	Hark het ko pani	Surface Flow (minor)	5	1000		2500
			Lift Irrigation	2	500		1000
		(new Schemes)	Ground Water Development	63	1260	5	3150
			(**deep tube wells**)				
			RRR of Water Bodies	1	300	-	300
			Sub Total :	**70**	**3060**		**6650**
			Construction of Field Channels(OFD works-CAD of Behali FIS)				
			Lined Field Channels		200	5	400
			Unlined Field Channels		100	5	100
			Micro Irrigation	81	162	5	324
			Total :				**7774**

		Hark het ko pani	Surface Flow (minor)	-			-
			Lift Irrigation	1	75	5	150
		(new Schemes)	Ground Water Development	94	1880	5	4700
			(deep tube wells)				
Baghmara	MOWR		RRR of Water Bodies				4850
			Sub Total :	95	1955		
			Construction of Field Channels(OFD works-CAD of Pavoi/Jinjia/Gelapuhuri FIS)				
			Lined Field Channels		500	5	1000
			Unlined Field Channels		250	5	250
			Micro Irrigation	30	60	5	120
			Total :				**6220**
		Hark het ko pani	Surface Flow (minor)	8	367	5	917.5
			Lift Irrigation	1	50	5	100
		(new Schemes)	Ground Water Development	42	840	5	2100
			(deep tube wells)				
Sakomatha	MOWR		RRR of Water Bodies	-	-	-	-
			Total:	**51**	**1257**		**3117.5**
			Construction of Field Channels (OFD works-CAD of Moujuli, Sakomatha & Sadharu FIS))				
			Lined Field		1900	5	3800

			Channels				
			Unlined Field Channels		950	5	950
			Micro Irrigation	300	300	5	300
			Total :				**8167.5**
Biswanath	MOWR	Hark het ko pani	Surface Flow (minor)				-
			Lift Irrigation				-
		(new Schemes)	Ground Water Development	46	1380	5	2760
			(**deep tube wells**)				
			RRR of Water Bodies	1	100	5	100
			Total :	47	1380		**2860**
Rangapara	MOWR	Har khet ko pani	Surface Flow (minor)	2	68		170
			Lift Irrigation	3	293		864.6
		(new Schemes)	Ground Water Development	75	1500		3750
			(**deep tube wells**)				
			RRR of Water Bodies	-	-	-	-
			Construction of Field Channels				
			Lined Field Channels				
			Unlined Field				

			Channels				
			Micro Irrigation				
			Total :	**80**	**1861**		**4784.6**
Balipara	MOWR	Har khet ko pani	Surface Flow (minor)	4	451	5	1127.5
			Lift Irrigation	1	140	5	280
		(new Schemes)	Ground Water Development	122	2440	5	6100
			(**deep tube wells**)				
			RRR of Water Bodies				-
			Sub Total :	**127**	**4251**		**7507.5**
			Construction of Field Channels (OFD works – CAD of Koloney FIS)				
			Lined Field Channels		100		100
			Unlined Field Channels		50		50
			Micro Irrigation	20	20		40
			Total :				**7697.5**
Sootea	MOWR	Hark het ko pani	Surface Flow (minor)	1 no	300	5	750
			Lift Irrigation	4 nos	900	5	1350
		(new Schemes)	Ground Water Development	135 nos	4050	5	8100
			(**deep tube wells**)				
			RRR of	2 nos	100	-	50

			Water Bodies				
			Total :	142 nos	5350		**10200**
			Construction of Field Channels(OFD works –CAD)				
			Lined Field Channels		200	5	400
			Unlined Field Channels		100		100
			Micro Irrigation	30	300		300
			Total :				**11000**
Naduar	MOWR	Hark het ko pani	Surface Flow (minor)				-
			Lift Irrigation				-
		(new Schemes)	Ground Water Development	54	1080	5	2700
			(**deep tube wells**)				
			RRR of Water Bodies				-
			Sub total :	**54**	**1080**		**2700**
			Construction of Field Channels				
			Lined Field Channels				
			Unlined Field Channels				
			Micro Irrigation				
			Total :				
	Department						
Gabharu	MOWR	Hark het ko pani	Surface Flow (minor)	-			-

			Lift Irrigation	-			
		(new Schemes)	Ground Water Development	45	900	5	2250
			(**deep tube wells**)				
			RRR of Water Bodies	-	-	-	
			Construction of Field Channels				
			Lined Field Channels				
			Unlined Field Channels				
			Micro Irrigation	20	100	5	250
			Total :	**65**	**1000**		**2500**
Bihaguri	MOWR	Hark het ko pani	Surface Flow (minor)	-			
			Lift Irrigation	1	100	5	150
		(new Schemes)	Ground Water Development	116	2320	5	5800
			(**deep tube wells**)				
			RRR of Water Bodies				
			Total :	**117**	**2420**		**5950**
Dhekiajuli	MOWR	Hark het ko pani	Surface Flow (minor)	20	2600	5	6500
			Lift Irrigation	15	2250	5	3375
		(new	Ground	317	6340	5	15850

		Schemes)	Water Development				
			(**deep tube wells**)				
			RRR of Water Bodies	-	-	-	-
			Construction of Field Channels				
			Lined Field Channels				
			Unlined Field Channels				
			Micro Irrigation				
			Total :		11190		**25725**
Borsola	MOWR	Hark het ko pani	Surface Flow (minor)	29	1473	5	3682.5
			Lift Irrigation	9	263	5	394.5
		(new Schemes)	Ground Water Development	230	4600	5	11500
			(**deep tube wells**)				
			RRR of Water Bodies			5	
			Total :	268	**6336**	**5**	**15577**

II. *Renovation of Existing Irrigation Schemes:* (Defunct/Partially Operative)(Revival of lost IP)

Name of the Blocks/Sub District	Concerned Ministry/ Department	Name of Scheme	Activity	Total Number/ Capacity (cum)	Command Area/Irrigation potential (Ha) to be revived	Period of Implemen-tation (5/7 yrs)	Estimated Cost (Rs in lakh.)
Dhekiajuli	MOWR/ Irrigation	Bengenajuli FIS	Surface Flow	1	350	5	175.00
		Panbari FIS	Surface Flow	1	520	5	370.00

		Dighaljuli FIS	Surface Flow	1	400	5	260.00
		Dherai FIS	Surface Flow	1	250	5	125.00
Balipara		Koloney FIS	Surface Flow	1	400	5	350.00
Biswanath		Burigong FIS	Surface Flow	1	200	5	175.00
		Panibharal LIS	Surface Minor	1	210	5	230.00
Baghmara		Pavoi FIS	Surface Flow	1	200	5	250.00
		Gelapukhuri FIS	Surface Flow	1	100	5	180.00
		Jinjia FIS	Surface Flow	1	100	5	100.00
		Kathanibari STWS	groundwater	10	20	5	10.00
		Mornoi FIS	Surface Flow	1	100	5	210.00
		Sootea LIS (Pt 2 & 5)	Surface lift	2	160	5	50.00
Chaiduar		Morasengelijan Krishi bund	Surface Flow	1	150	5	50.00
		Buroi Hlem DTW IS	Ground water	1	60	5	40.00
		Daineygaon DTW IS	Ground water	1	30	5	5.00
Pub chaiduar		Bhetjan Salbari FIS	Surface FIS	1	30	5	30.00
		Sonalibari DTW	Ground water	1	30	5	40.00
		Kokila STW	Ground water	10	20	5	10.00
Sakomatha		Sadharu FIS	Surface Flow	1	100	5	150.00
		Sakonatha FIS	Surafce Flow	1	200	5	225.00
		Diring FIS	Surface Flow	1	200	5	255.00
		Moujuli FIS	Surface Flow	1	200	5	215.00
Behali		Rowmari DTW	Ground water	2	30	5	80.00
		Sialmari STW	Ground water	24	24	5	15.00
		Batiamari STWs	Ground water	75	75	5	100.00
Naduar		Gowalgaon & Gomiripal DTW IS	Ground water	3	90	5	140.00
			Total :	146	**3529**		**3740.00**

III.*Ongoing Irrigation Schemes:* (Centrally Sponsored- NABARD/NLCPR etc.)

Name of the Blocks/Sub District	Concerned Ministry/ Department	Name of Scheme	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)created/ to be created	Period of Implementation	Estimated Cost (Rs in lakh.)
Borsola	NABARD, 2013-14	Alisinga DTW IS (1Pt)	Ground Water	1	30	completed	46.75
	NLCPR	Borchalla DTWIS (30 Pts)	Ground water	30	900	2	1808.46

Gabharu	NABARD, 2013-14	Neraiati Gerua Pathar DTW IS(1pt)	Ground water	1	30	completed	37.58
Bihaguri	NABARD, 2013-14	Niz Bihaguri Bordubia DTW IS (1 Pt)	Ground water	1	30	1	41.225
Pub- Chaiduar	NABARD, 2013-14	Deonabari DTW IS (1 Pt)	Ground water	1	30	completed	32.36
	NABARD, 2013-14	Gopsaguri DTW IS (1 Pt)	Ground water	1	30	completed	33.51
	NABARD, 2013-14	Sonalibari DTW IS (1 Pt)	Ground water	1	30	completed	16.11
		Total:			**1080** (created = 120 Ha, to be created =930 Ha)		**2015.995**

III.State Planned Ongoing Scheme of Irrigation Department in Sonitpur District

Name of the Blocks/Sub District	Concerned Ministry/ Department	Name of Scheme	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha) to be created	Period of Implementation	Estimated Cost (Rs in lakh.)
Sootea	TSP (2005-06), Revalidated	Monai Flow Irrigation Scheme	Surface Flow	1	300	1	99.95
	TSP (2013-14)	Selaikhati Krishi Bund	Surface Flow	1	40	1	46.00
Pub Chaiduar	TSP (2010-11)	Bhetijan Salbari FIS	Surface Flow	1	30	1	12.47
Chaiduar	SCSP (2013-14)	Mora Sengelijan Krishi Bund	Surface Flow	1	120	1	6.49
Behali	SCSP (,2012-13)	Telenga Krishi Bund & Sukra Bund	Surface Flow	1	140	completed	4.16
	TSP (2012-13)	Naharjan Krishi bund	Surface Flow	1	300	1	48.00
		Total:			**930** (created = 140 Ha, to be created =790 Ha)		**217.07**

Annexure VIII : Strategic Action Plan for irrigation in District under PMKSY- Per Drop More Crop

Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (Rs in lakh.)
Chaiduar	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- **(New Schemes)**	DPAP Drip	-		-	-
			DPAP Sprinkler	30	15	5	42
			Shallow Tube wells	2851	2851	5	1710.6
			Training & extension activities (for 5 years) including training aids etc	-	-	5	10
			Total:	**2887**	**2866**		**1762.6**
Pubchaiduar	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- (**New Schemes)**	DPAP Drip	-		-	-
			DPAP Sprinkler	28	14	5	39.2
			Shallow Tube wells	3313	3313	5	1987.8
			Training & extension activities (for 5 years) including training aids etc	-	-	5	10
			Total:	**3341**	**3327**	**-**	**2037**
	MOA & FWDAC & FW	Per drop more crop (Supplementary Water management activities)	Topping up of MGNREGA				
	MOA & FWDAC & FW		Drought Proofing through check/water harvesting structures				
Behali	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- **(New Schemes)**	DPAP Drip	18	9	5	25.2
			DPAP Sprinkler	50	25	5	50
			Shallow Tube wells	317	317	5	190.2

			(diesel/electricity operated)				
			Shallow Tube wells (solar operated)	6	30	5	30
			Rain Guns	160	160	5	96
			Low lift pumps	81	162	5	40.5
			Training & extension activities (for 5 years) including training aids etc			5	10
			Total:	**551**	**703**		**441.9**
	MOA & FWDAC & FW	Per drop more crop (Supplementary Water management activities	Topping up of MGNREGA				
	MOA & FWDAC & FW		Drought Proofing through check/water harvesting structure				
Baghmara	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- (**New Schemes)**	DPAP Drip	1	0.5	5	1.4
			DPAP Sprinkler	54	27	5	54
			Shallow Tube wells	804	804		482.4
			Rain Guns	117	117	5	70.2
			Training & extension activities (for 5 years) including training aids etc			5	10
			Total:	**976**	**948.5**		**618**
Sakomatha	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- **(New Schemes)**	DPAP Drip	50	25	5	35
			DPAP Sprinkler	86	43	5	43
			Shallow Tube wells	343	343	5	205.8
			Low Lift Pumps	117	234	5	58.5
			Training & extension			5	10

			activities (for 5 years) including training aids etc				
			Total:	**596**	**645**		**352.3**
	MOA & FWDAC & FW	Per drop more crop (Supplementary	Topping up of MGNREGA				-
	MOA & FWDAC & FW	Water management activities	Drought Proofing through check/water harvesting structure				-
Biswanath	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- (**New Schemes)**	DPAP Drip	15	7.5	5	21
			DPAP Sprinkler	26	13`	5	26
			Shallow Tube wells(diesels)	287	287	5	172.2
			Shallow tube wells (electrically operated)	25	125	5	37.5
			Shallow tube wells (solar)	31	155	5	155
			Training & extension activities (for 5 years) including training aids etc			5	10
			Rain guns	13	13	5	7.8
			Low lift pumps(5HP)	18	36	5	9
			Total:	**415**	**636.5**	**-**	**438.5**
Sootea	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- **(New Schemes)**	DPAP Drip	-		-	-
			DPAP Sprinkler				-
			Shallow Tube wells	2042	2042	1	1225.2
			Training & extension activities (for 5 years) including training aids etc			5	10
			Total:		**2042**		**1235.2**

	MOA & FWDAC & FW	Per drop more crop (Supplementary	Topping up of MGNREGA				-
	MOA & FWDAC & FW	Water management activities	Drought Proofing through check/water harvesting structure				-
Naduar	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- (**New Schemes)**	DPAP Drip				
			DPAP Sprinkler				
			Shallow Tube wells	1797	1797	5	1078.2
			Training & extension activities (for 5 years) including training aids etc			5	10
			Total:		**1797**		**1807**
	MOA & FWDAC & FW	Per drop more crop (Supplementary Water management activities)	Topping up of MGNREGA				
	MOA & FWDAC & FW		Drought Proofing through check/water harvesting structures				
Rangapara	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- **(New Schemes)**	DPAP Drip	-		-	-
			DPAP Sprinkler				
			Shallow Tube wells	1056	1056	5	633.6
			Training & extension activities (for 5 years) including training aids etc			5	10
	MOA & FWDAC & FW	Per drop more crop (Supplementary	Topping up of MGNREGA	-			
	MOA & FWDAC & FW	Water management activities	Drought Proofing through water harvesting structure including irrigation through 5 LLPs	**1**	**10**		**10**

			Total:	**1057**	**1066**		**653.6**
Balipara	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- (**New Schemes)**	DPAP Drip	15	7.5		21
			DPAP Sprinkler	-			-
			LLP(Low lift pumps)	1	5		0.5
			Shallow Tube wells	2947	2947		1768.2
			Training & extension activities (for 5 years) including training aids etc			5	10
			Total:	**2963**	**2959.5**		**1799.7**
	MOA & FWDAC & FW	Per drop more crop (Supplementary Water management activities	Topping up of MGNREGA				
	MOA & FWDAC & FW		Drought Proofing through check/water harvesting structures				
Gabharu	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- **(New Schemes)**	DPAP Drip	-		-	-
			DPAP Sprinkler				-
			Shallow Tube wells	999	999	5	1198.8
			Training & extension activities (for 5 years) including training aids etc			5	10
			Total:		**999**		**1208.8**
	MOA & FWDAC & FW	Per drop more crop (Supplementary Water management activities	Topping up of MGNREGA				-
	MOA & FWDAC & FW		Drought Proofing through check/water harvesting structure				-
Bihaguri	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- (**New Schemes)**	DPAP Drip	4	2		5.6
			DPAP Sprinkler	8	4		8
			Shallow Tube wells	590	590		354
			Shallow Tube Wells (Solar)	499	998	5	2495
			Training & extension			5	10

			activities (for 5 years) including training aids etc				
			Total:	**1101**	**1594**		**2872.6**
	MOA & FWDAC & FW	Per drop more crop (Supplementary Water management activities	Topping up of MGNREGA				
	MOA & FWDAC & FW		Drought Proofing through check/water harvesting structures				
Dhekiajuli	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- **(New Schemes)**	DPAP Drip	20	10	5	28
			DPAP Sprinkler	80	40	5	79
			Shallow Tube wells	2493	2493	5	1495.8
			Training & extension activities (for 5 years) including training aids etc			5	10
			Total:	**2593**	**2543**		**1612.8**
	MOA & FWDAC & FW	Per drop more crop (Supplementary Water management activities	Topping up of MGNREGA				
	MOA & FWDAC & FW		Drought Proofing through check/water harvesting structure				
Borsola	MOA & FWDAC & FW	Per drop more crop (Micro Irrigation)- (**New Schemes)**	DPAP Drip				
			DPAP Sprinkler	84	42	5	84
			Shallow Tube wells	1587	1587	5	952.2
			Training & extension activities (for 5 years) including training aids etc			5	10
			Total:	**1671**	**1629**		**1046.2**
	MOA & FWDAC & FW	Per drop more crop	Topping up of MGNREGA				

		(Supplementary					
	MOA & FWDAC & FW	Water management activities)	Drought Proofing through check/water harvesting structures				

Annexure IX : Strategic Action Plan for irrigation in District under PMKSY- Watershed

Name of the Blocks	Concerned Ministry/ Department	Compo-nent	Activity	Total Number/ Capacity (cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Gabharu	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	25 Nos	200Ha	5	2400000
	DoLR-MoRD		Check dam	5 Nos	416Ha	5	6000000
	DoLR-MoRD		Nallah Bunds	7900Rm	95Ha	5	1137600
Mora Bhorali Watershed	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure	10 Nos	100Ha	5	1200000
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	6500Rm	78Ha	5	936000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	27 Nos	22Ha	5	2592000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				

	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1351 Ha**		**19545600**
Name of the Blocks	Concerned Ministry/ Department	Compo-nent	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Balipara	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	25 Nos	200Ha	5	2400000
Name of Watershed	DoLR-MoRD		Check dam	5 Nos	417Ha	5	5000000
Haleswar Watershed	DoLR-MoRD		Nallah Bunds	8500Rm	102Ha	5	1224000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure	15 Nos	150Ha	5	1800000
	DoLR-MoRD		Fishery Pond/Cattle pond	15 Nos	120Ha	5	1440000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	2500Rm	30Ha	5	360000
	DoLR-MoRD		Percolation Tanks				

	DoLR-MoRD		Other Ground Water Recharge Structure	10 Nos	100Ha	5	1200000
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1439.00 Ha**		**17264000**
Name of the Blocks	Concerned Ministry/ Department	Compo-nent	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Dhekiajuli	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY	Farm ponds	10 Nos	160Ha	5	960000

Name of Watershed	DoLR-MoRD	Watershed	Check dam	20 Nos	500Ha	5	24000000
Pachnoi Watershed	DoLR-MoRD		Nallah Bunds	15000Rm	180Ha	5	2160000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond				
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds				
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	6500Rm	78Ha	5	936000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond				
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land				

			Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**918.00 Ha**		**28056000**
Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Barchala	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	25 Nos	200Ha	5	2400000
Name of Watershed	DoLR-MoRD		Check dam	5 Nos	417Ha	5	5000000
Barbhagia Borsola Watershed	DoLR-MoRD		Nallah Bunds	4500Rm	54Ha	5	648000
	DoLR-MoRD		Percolation Tanks			5	
	DoLR-MoRD		Other Ground Water Recharge Structure	5 Nos	50Ha	5	600000
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000
	DoLR-MoRD		Check dam			5	
	DoLR-MoRD		Nallah Bunds	2500Rm	30Ha	5	360000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	27 Nos	216Ha	5	2592000
	DoLR-MoRD		Newly Created				

	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1407**		**16880000**
Name of the Blocks/Sub District	Concerned Ministry/ Department	Compo-nent	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Bihaguri	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Check dam	5 Nos	417Ha	5	5000000
Name of Watershed	DoLR-MoRD		Nallah Bunds	3600Rm	43.2Ha	5	518400
Thelama-raghat Watershed	DoLR-MoRD		Percolation Tanks			5	
	DoLR-MoRD		Other Ground Water Recharge Structure	9 Nos	90Ha	5	1080000
	DoLR-MoRD		Fishery Pond/Cattle pond	26 Nos	208Ha	5	2496000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000
	DoLR-MoRD		Check dam				

	DoLR-MoRD		Nallah Bunds	2500Rm	30Ha	5	360000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1388.2**		**16654400**
Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Rangapara	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	30 Nos	240Ha	5	2880000
Name of Watershed	DoLR-MoRD		Check dam	5 Nos	417Ha	5	5000000
Phuluguri Watershed	DoLR-MoRD		Nallah Bunds	3800Rm	45.6Ha	5	547200
	DoLR-MoRD		Percolation Tanks				

	DoLR-MoRD		Other Ground Water Recharge Structure	10 Nos	100Ha	5	1200000
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	6500Rm	78Ha	5	936000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1480.60 Ha**		**17763200**

Name of the Blocks/Sub District	Concerned Ministry/ Department	Compo-nent	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Naduwar	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	20 Nos	160Ha	5	1920000
Name of Watershed	DoLR-MoRD		Check dam	5 Nos	417Ha	5	5000000
Jiya Bharali Watershed	DoLR-MoRD		Nallah Bunds	7500Rm	90Ha	5	1080000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure	9 Nos	90Ha	5	1080000
	DoLR-MoRD		Fishery Pond/Cattle pond	25 Nos	200Ha	5	2400000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	15000Rm	54Ha	5	3900000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of				

			Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1451 Ha**		**20660000**
Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Sootea	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	25 Nos	200Ha	5	2400000
Name of Watershed	DoLR-MoRD		Check dam	5 Nos	417Ha	5	5000000
Ghiladhari Watershed	DoLR-MoRD		Nallah Bunds	4500Rm	54Ha	5	648000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure	6 Nos	60Ha	5	720000
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	6500Rm	78Ha	5	936000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	27 Nos	216Ha	5	2592000

	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1465 Ha**		**17576000**
Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Sakomatha	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	25 Nos	200Ha	5	2400000
Name of Watershed	DoLR-MoRD		Check dam	5 Nos	417Ha	5	5000000
BarpatharWatershed	DoLR-MoRD		Nallah Bunds	6200Rm	74.4Ha	5	892800
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge	10 Nos	100Ha	5	1200000

			Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	3500Rm	42Ha	5	504000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	27 Nos	216Ha	5	2592000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				

	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1489.40 Ha**		**17868800**
Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Biswanath	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	30 Nos	240Ha	5	2880000
Name of Watershed	DoLR-MoRD		Check dam	5 Nos	417Ha	5	5000000
Kumalia Watershed	DoLR-MoRD		Nallah Bunds	5200Rm	62.4Ha	5	748800
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure	10 Nos	100Ha	5	1200000
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	25 Nos	200Ha	5	2400000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	3500Rm	42Ha	5	504000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with	Water Conservation				

	DoLR-MoRD	MGNREGA	Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1381.00 Ha**		**16572800**
Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Baghmara	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	20 Nos	160Ha	5	1920000
Name of Watershed	DoLR-MoRD		Check dam	3 Nos	250Ha	5	3000000
Borgang Watershed	DoLR-MoRD		Nallah Bunds	8200Rm	98.4Ha	5	1180800
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure	7 Nos	70Ha	5	840000
	DoLR-MoRD		Fishery Pond/Cattle	25 Nos	200Ha	5	2400000

			pond				
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	25 Nos	200Ha	5	2400000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	2500Rm	30Ha	5	360000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	17 Nos	136Ha	5	1632000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation				

			Canals & Drains				
			Total		**1144.40 Ha**		**13732800**
Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Behali	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	25 Nos	200Ha	5	2400000
Name of Watershed	DoLR-MoRD		Check dam	3 Nos	250Ha	5	3000000
Behali Watershed	DoLR-MoRD		Nallah Bunds	7500Rm	90Ha	5	1080000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure	8 Nos	80Ha	5	960000
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	3500Rm	42Ha	5	504000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of				

			Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1262 Ha**		**15144000**
Name of the Blocks/Sub District	Concerned Ministry/ Department	Component	Activity	Total Number/ Capacity(cum)	Command Area/Irrigation potential (Ha)	Period of Implementation (5/7 yrs)	Estimated Cost (In Rs.)
Choiduwar	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	25 Nos	200Ha	5	2400000
Name of Watershed	DoLR-MoRD		Check dam	7 Nos	583Ha	5	7000000
Ballamjan Watershed	DoLR-MoRD		Nallah Bunds	8200Rm	95Ha	5	1180800
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure	10 Nos	100Ha	5	1200000
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000

	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	4500Rm	54Ha	5	648000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	27 Nos	216Ha	5	2592000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				
	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1688 Ha**		**20300800**
Name of the Blocks/Sub	Concerned	Component	Activity	Total Number/	Command	Period of	Estimated

District	Ministry/ Department			Capacity(cum)	Area/Irrigation potential (Ha)	Implementation (5/7 yrs)	Cost (In Rs.)
Pub –Choiduwar	DoLR-MoRD		Newly Created WHS				
	DoLR-MoRD	PMKSY Watershed	Farm ponds	25 Nos	200Ha	5	2400000
Name of Watershed	DoLR-MoRD		Check dam	6 Nos	500Ha	5	6000000
Cheng-mara Kumar-kata	DoLR-MoRD		Nallah Bunds	6800Rm	82Ha	5	979200
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure	10 Nos	100Ha	5	1200000
	DoLR-MoRD		Fishery Pond/Cattle pond	15 Nos	120Ha	5	1440000
	DoLR-MoRD		Renovated WHS				
	DoLR-MoRD		Farm ponds	35 Nos	280Ha	5	3360000
	DoLR-MoRD		Check dam				
	DoLR-MoRD		Nallah Bunds	6500Rm	78Ha	5	936000
	DoLR-MoRD		Percolation Tanks				
	DoLR-MoRD		Other Ground Water Recharge Structure				
	DoLR-MoRD		Fishery Pond/Cattle pond	20 Nos	160Ha	5	1920000
	DoLR-MoRD		Newly Created				
	DoLR-MoRD	Convergance with MGNREGA	Water Conservation				
	DoLR-MoRD		Water Harvesting				
	DoLR-MoRD		Creation of Irrigation Canals and Drains				

	DoLR-MoRD		Providing Infrastructure for Irrigation				
	DoLR-MoRD		Land Development				
	DoLR-MoRD		Renovated				
	DoLR-MoRD		Renovation of Water bodies including desiltation				
	DoLR-MoRD		Renovation & Maintenance of Irrigation Canals & Drains				
			Total		**1520.00 Ha**		**18235200**