



# **CAMPA PLANTATION MONITORING REPORT FOR THE STATE OF WEST BENGAL**



**MONITORING CELL  
RESEARCH, MONITORING & DEVELOPMENT WING  
FOREST DIRECTORATE**

**DATE: 05.06.2021**



## PREFACE

The Monitoring programme of forest plantations in West Bengal commenced in 1992 with the advent of the West Bengal Forestry Project. A new Monitoring Circle was set up in Forest Directorate with the expansion of afforestation schemes since it was necessary to evaluate scientifically the success of the programme. Since investment in forestry is of long term nature, such evaluation is very much required.

While plantations raised under the State plan schemes are routinely monitored, the same was not done with respect to the plantations raised under the CAMPA scheme. Later, with the setting up of a dedicated CAMPA wing, formal monitoring of the plantations raised under that scheme was initiated. Major issue was the availability of the list of plantations raised in different years over different Divisions. Hence it was decided to monitor those plantations to which list are made available by the CAMPA authority. Consequently, 393.79 ha of plantations raised during the period 2004, 2011, 2016 to 2020 over 12 Divisions of North Bengal and 524.267 ha of plantations raised during the period 2017 to 2020 over 9 Divisions in South Bengal, were identified and monitored.

Since various plantations created in different years were there in the CAMPA, monitoring has been restricted to assessing the basic parameters viz. Survival percentage and general health (as indicated in the height and collar girth). Modern conformity parameters (processes oriented approach) were not taken into consideration.

The draft report was circulated among the participating Divisions and their remarks were incorporated. High sampling intensity of 7.5%, as applicable to the first year plantations ensured higher accuracy. I am happy to observe that our monitoring team has reported a relatively higher performance barring a few despite being done after many years considering the fact that survival of above 50% in a five years old plantation is considered very good.

Monitoring is a team work and contributions from different tiers of officers, front line and office staff are essential for its success. The ADFOs and the Forest Range Officers are the unsung heroes. Special commendations are conveyed to the DFOs viz. Sri K. Sarkar IFS, Sri D. M. Pradhan IFS, and Sri U. K. Nag WBFS for their inspiring leadership. The Chief Conservator of Forests, Sri M R Bhatta IFS and Dr. Sudhir Chandra Das IFS provided the able guidance. Special thanks are conveyed to the prevailing CCF M & E, the DFO, Mon (N), the ADFO, Mon(S)(Sri Kamal Saha, WBFS) and computer assistant, (Sri Suman Ghosh) for taking efforts in editing and compiling the Report in the present form.



( Dr. J T Mathew IFS)  
Principal Chief Conservator of Forests  
Research, Monitoring & Development

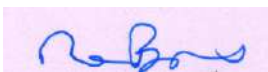
## FOREWORD

Periodic survey and monitoring of plantations is an indispensable tool for forest management & policy formulations. It also helps policy makers, field executives and Government as a whole in ascertaining the plantation growth statistics, accountability of stake holders and to judge the effectiveness of the management practices.

Monitoring of CAMPA plantations have been done for the first time during 2020-21 by Monitoring (North) Division. Total area of 393.79 ha has been monitored belonging to different years of creation. Hence, instead of classifying the plantations into 1<sup>st</sup> year, 3<sup>rd</sup> year and 5<sup>th</sup> year, the report has shown all the plantations together under one category i.e. 1<sup>st</sup> time monitoring of plantations. In Monitoring (South) Division, monitoring of CAMPA plantations were also done for plantation creation years from 2017 to 2020 over an area of 524.267ha in 9 Divisions.

The presentation of the Draft Survey Monitoring Report of North Bengal was made on 13<sup>th</sup> February, 2020 at Sukna NIC Hall, Siliguri. Some of the suggestions received during the presentation are included in this report. Valuable suggestions given by PCCF (HoFF) & PCCF, RMD, WB in the Presentation Meeting have been incorporated by DFO.

I would like to thank Shri. Koushik Sarkar, IFS, Divisional Forest Officer, Monitoring (North) Division, Shri D. M. Pradhan, IFS, Divisional Forest Officer, Monitoring (South) Division, Shri Bhupen Biswakarma, WBFS/ADF0, Shri Kamal Saha, WBFS/ADF0, all field staffs and office staffs for doing their job sincerely and painstakingly.



APCCF & Conservator of Forests,  
Monitoring Circle, WB



Chief Conservator of Forests,  
Monitoring & Evaluation, WB

## ACKNOWLEDGEMENT

The field executives and ministerial staffs of these Divisions have contributed to the best of their capabilities and dedication for carrying out the field assigned job and successful compilation of the data in prescribed format. We gratefully acknowledge the co-operation of all concerned.

Our counterparts of the respective Divisions, at all levels, were highly co-operative during execution of field works. We express our gratefulness for them.

The superiors in the hierarchy have been extremely helpful and encouraging throughout. We extend our personal gratitude to Dr. J. T. Mathew, IFS, Principal Chief Conservator of Forests, Research, Monitoring & Development, West Bengal, Shri. M.C. Biswas, Addl. PCCF & Conservator of Forests, Monitoring Circle, West Bengal, Dr. S.C. Das, IFS, Chief Conservator of Forests, Monitoring & Evaluation, West Bengal and Shri M. R. Bhatta, IFS, the then Chief Conservator of Forests, Monitoring & Evaluation, West Bengal for realization of the ground realities and rendering valuable suggestions and support wherever and whenever needed. We are sincerely thankful to the Assistant Divisional Forest Officer Sri Bhupen Biswakarma, WBFS, ADFO, Mon (N) and Sri Kamal Saha, WBFS, ADFO, Mon(S) for their painstaking effort in assisting us in all kinds of rectifications and compilations along with Sri Suman Ghosh, Data Entry Operator of Monitoring (South) Division and Sri Prasanta Paul, Data Entry Operator of Monitoring (North) Division.



(Sri Utpal Kr. Nag, WBFS)  
Divisional Forest Officer  
Monitoring (South) Division



(Shri. K Sarkar, IFS)  
Divisional Forest Officer  
Monitoring (North) Division

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## CHAPTER – I

### MONITORING METHODOLOGY ADOPTED

#### Introduction

Monitoring & Evaluation is an important tool of management information system upon which many management decisions are dependent.

Monitoring (N) Division has executed the Survey Monitoring works of plantations under CAMPA during 2018-19 & Monitoring (S) Division did the same practice during the year 2020-21 as detailed below:

| Name of the Division | Type of Monitoring                             | Creation Year of plantations        | Year of Monitoring | Total Reported Area (in Hectares) | Area-monitored (in Hectares) |
|----------------------|--|-------------------------------------|--------------------|-----------------------------------|------------------------------|
| Monitoring (North)   | 1 <sup>st</sup> time Monitoring of plantations | 2004,2011,2016,2017, 2018,2019,2020 | 2020-21            | 393.79                            | 393.79                       |
|                      | <b>Total</b>                                   |                                     |                    | <b>393.79</b>                     | <b>393.79</b>                |
| Monitoring (South)   | 1 <sup>st</sup> Time Monitoring of plantations | 2017, 2018, 2019 and 2020           | 2020-21            | 638.12                            | 524.26                       |
|                      | <b>Total</b>                                   |                                     |                    | <b>638.12</b>                     | <b>524.26</b>                |

The analysis has been carried out and result achieved on the basis of data recorded in the prescribed Survey Monitoring data sheets.

The individual plantation data in a compiled form was circulated to the concerned Divisional Management Unit and their respective Conservator of Forests/Chief Conservator of Forests in advance for checking of data & comments. This helped them to replace the casualties & take other remedial measures targeted towards improvement of quality of plantations. The feedback received has been considered in the compilation of draft monitoring report.

Three major parameters viz. survival percentage, height and girth at breast height (only for 5<sup>th</sup> year plantation) of seedling are taken into consideration for the process. Here for the monitoring of plantations raised under CAMPA only survival percentage & height have been taken under consideration.

The other parameters viz. maintenance of plantation journal, sources of seed for raising nursery, time schedule of activity of creation stage & frequency of field visit of the supervising authority etc are also

considered in performance scoring of the plantation, the detail of which is given in the new monitoring methodology.

The above parameters are measured in the field in individual patch of the plantation by random sampling method. The procedure is given below:-

For the purpose of execution of survey & monitoring works the Statistical random sampling method is in practice.

The sampling intensity and size of sample plot for different ages of plantation is given below-

| Age of plantation    | Sampling intensity | Size of sample plot | Data recording                                  |
|----------------------|--------------------|---------------------|---|
| 1 <sup>st</sup> year | 7.5% of the area   | 50mt.X50mt.         | No of seedling species wise & height class wise |

### Pre-survey Works

1. Copies of regeneration maps along with plantation journals are collected from the respective Divisions.
2. Location, area, spacing, planting scheme etc. are also recorded as check list.
3. A grid line as per scale is laid over the map with quadrates of 50m x 50m & each grid is serially numbered.
4. Numbers of Sample plots (grids) are chosen randomly using the statistical random number table.

### Field works

1. The selected sample plots are identified in the field.
2. Boundary corners are clearly marked with raised earthen mound topped with painted peg and geo-location is recorded.
3. Total enumeration is carried out species wise and in respect of height class intervals and also girth at breast height for the 5<sup>th</sup> year plantation.
4. The area of plantation is checked in the field by traversing with GPS.
5. At the time of Survey & Monitoring, the staff of respective FMU remains present & put their initials on the data sheets as the sign of authentication.



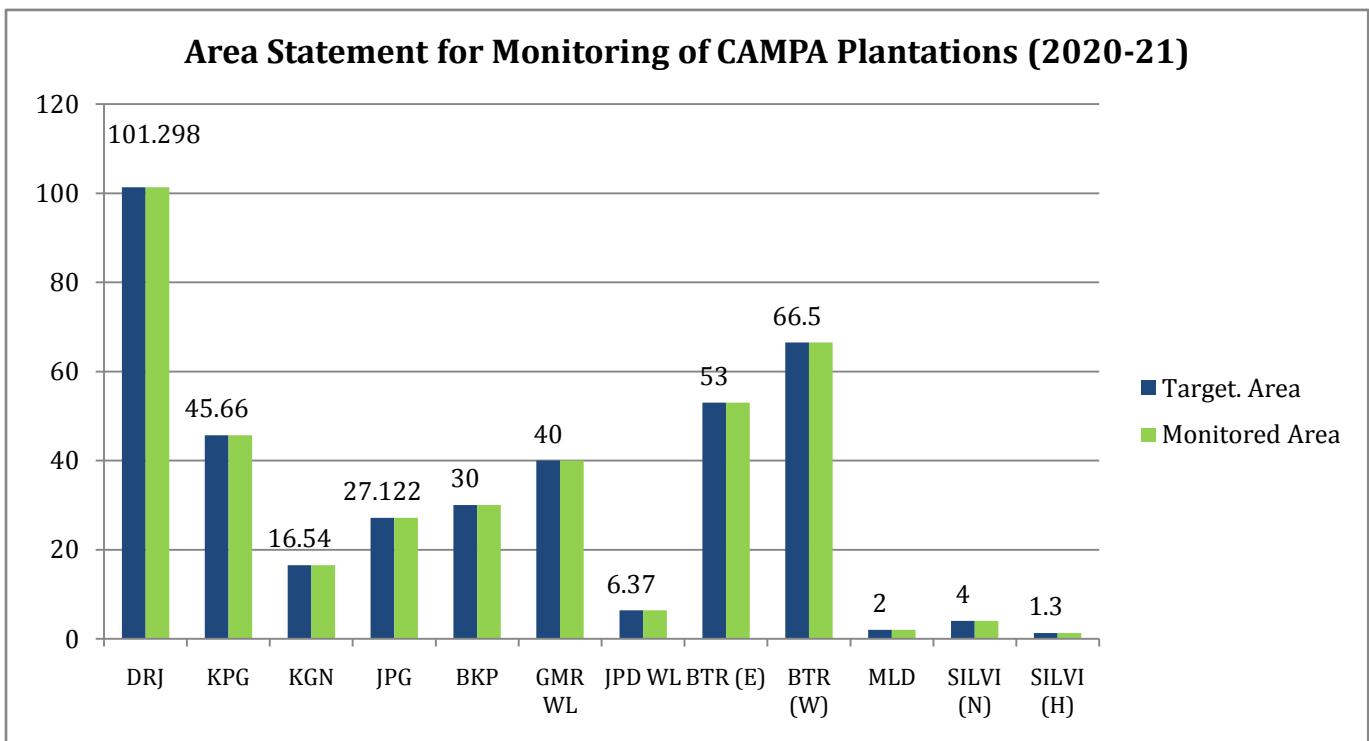
## CHAPTER - II

### MONITORING OF CAMPA PLANTATIONS IN NORTH BENGAL (2020-21)

#### i. AREA STATEMENT

Area in Ha.  
Table No. - 1

| SL No.            | Division                 | Monitoring (2020-21) |                     |
|-------------------|--------------------------|----------------------|---------------------|
|                   |                          | Total Area (Ha)      | Monitored Area (Ha) |
| 1                 | Darjeeling               | 101.298              | 101.298             |
| 2                 | Kalimpong                | 45.66                | 45.66               |
| 3                 | Kurseong                 | 16.54                | 16.54               |
| 4                 | Jalpaiguri               | 27.122               | 27.122              |
| 5                 | Baikunthapur             | 30.00                | 30.00               |
| 6                 | Gorumara Wild Life       | 40.00                | 40.00               |
| 7                 | Jaldapara Wild Life      | 6.37                 | 6.37                |
| 8                 | Buxa Tiger Reserve(East) | 53.00                | 53.00               |
| 9                 | Buxa Tiger Reserve(West) | 66.50                | 66.5                |
| 10                | Malda                    | 02.00                | 02.00               |
| 11                | Silviculture (North)     | 04.00                | 04.00               |
| 12                | Silviculture Hill        | 01.30                | 01.30               |
| <b>G. Total:-</b> |                          | <b>393.79</b>        | <b>393.79</b>       |

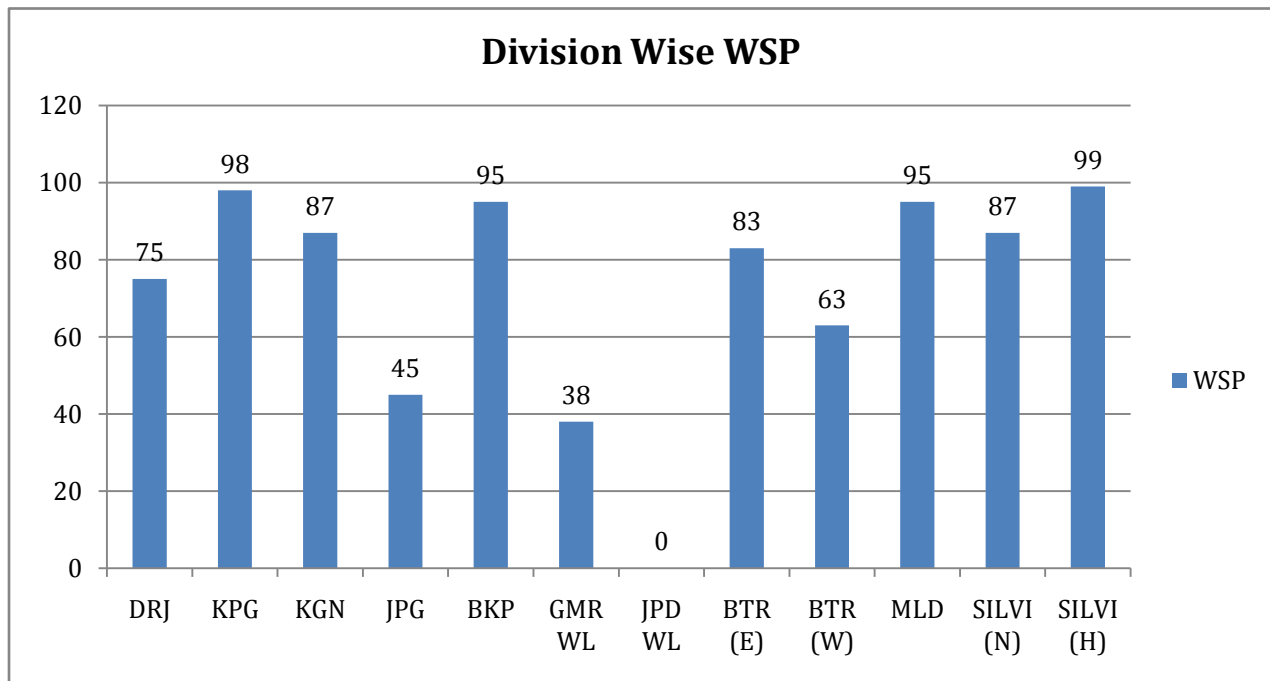


**ii. WEIGHTED SURVIVAL PERCENTAGE YEAR WISE IN EACH DIVISION**

| Circle                   | Division             | Year         | Area Monitored | Total Area Monitored | SP        | WSP       |
|--------------------------|----------------------|--------------|----------------|----------------------|-----------|-----------|
| Hill Circle              | Darjeeling           | 2004         | 20.00          | <b>20.00</b>         | 66        | <b>66</b> |
|                          |                      | 2011         | 5.00           | <b>59.778</b>        | 75        | <b>80</b> |
|                          |                      |              | 15.00          |                      | 85        |           |
|                          |                      |              | 3.43           |                      | 72        |           |
|                          |                      |              | 3.2918         |                      | 72        |           |
|                          |                      |              | 3.3362         |                      | 78        |           |
|                          |                      |              | 9.72           |                      | 85        |           |
|                          |                      |              | 2.50           |                      | 72        |           |
|                          |                      |              | 17.50          |                      | 80        |           |
|                          |                      | 2016         | 1.84           | <b>20.88</b>         | 94        | <b>66</b> |
|                          | 19.00                |              | 63             |                      |           |           |
|                          | 0.04                 |              | 52             |                      |           |           |
|                          | 2018                 | 0.64         | <b>0.64</b>    | <b>85</b>            | <b>85</b> |           |
|                          | Kurseong             | 2019         | 5.04           | <b>16.54</b>         | 90        | <b>87</b> |
|                          |                      |              | 11.50          |                      | 85        |           |
| Kalimpong                | 2020                 | 20.66        | <b>45.66</b>   | 99                   | <b>98</b> |           |
|                          |                      | 15.00        |                | 97                   |           |           |
|                          |                      | 10.00        |                | 96                   |           |           |
| Northern Circle          | Baikunthapur         | 2020         | 30.00          | <b>30.00</b>         | 95        | <b>95</b> |
|                          | Jalpaiguri           | 2011         | 7.062          | <b>19.062</b>        | 36        | <b>28</b> |
|                          |                      |              | 12.00          |                      | 24        |           |
| 2019                     | 8.06                 | <b>8.06</b>  | 84             | <b>84</b>            |           |           |
| North - West Circle      | Malda                | 2020         | 2.00           | <b>2.00</b>          | 95        | <b>95</b> |
| Research Circle          | Silviculture (North) | 2019         | 4.00           | <b>4.00</b>          | 87        | <b>87</b> |
|                          | Silviculture (Hill)  | 2019         | 1.30           | <b>1.30</b>          | 99        | <b>99</b> |
| BTR Circle               | BTR (East)           | 2017         | 10.00          | <b>20.00</b>         | 63        | <b>74</b> |
|                          |                      |              | 10.00          |                      | 84        |           |
|                          |                      | 2020         | 12.00          | <b>33.00</b>         | 91        | <b>89</b> |
|                          | 21.00                |              | 88             |                      |           |           |
|                          | BTR (West)           | 2017         | 23.50          | <b>43.50</b>         | 60        | <b>62</b> |
|                          |                      |              | 10.00          |                      | 68        |           |
| 10.00                    |                      | 60           |                |                      |           |           |
| 2018                     | 23.00                | <b>23.00</b> | <b>65</b>      | <b>65</b>            |           |           |
| Wild Life (North) Circle | Jaldapara WL         | 2014         | 6.37           | <b>6.37</b>          | <b>0</b>  | <b>0</b>  |
|                          | Gorumara WL          | 2019         | 10.00          | <b>40.00</b>         | 54        | <b>38</b> |
|                          |                      |              | 10.00          |                      | 39        |           |
|                          |                      |              | 6.00           |                      | 26        |           |
|                          |                      |              | 12.00          |                      | 29        |           |
| 2.00                     | 51                   |              |                |                      |           |           |

**DIVISION WISE WEIGHTED SURVIVAL PERCENTAGE  
(MONITORING Report 2020-21)**

| Division                 | CAMPA         |           |
|--------------------------|---------------|-----------|
|                          | Area          | WPS       |
| Darjeeling               | 101.298       | 75        |
| Kalimpong                | 45.66         | 98        |
| Kurseong                 | 16.54         | 87        |
| Jalpaiguri               | 27.122        | 45        |
| Baikunthapur             | 30.00         | 95        |
| Gorumara Wild Life       | 40.00         | 38        |
| Jaldapara Wild Life      | 6.37          | 0         |
| Buxa Tiger Reserve(East) | 53.00         | 83        |
| Buxa Tiger Reserve(West) | 66.50         | 63        |
| Malda                    | 02.00         | 95        |
| Silviculture (North)     | 04.00         | 87        |
| Silviculture Hill        | 01.30         | 99        |
| <b>Total:-</b>           | <b>393.79</b> | <b>72</b> |



### iii. DETAILED MONITORING REPORT OF DIVISIONS

#### DETAILED MONITORING REPORT OF HILL CIRCLE

##### Division - Darjeeling Forest Monitoring Report 2020-21 ( CAMPA )

| Year | Zone | Circle      | Division   | Scheme | Range        | Beat         | Location         | Spacing       | Area (Ha) | Major Species tried             | SP | GPS Reading  |              | Ht. (cm) | BHG | Date of Survey |
|------|------|-------------|------------|--------|--------------|--------------|------------------|---------------|-----------|---------------------------------|----|--------------|--------------|----------|-----|----------------|
|      |      |             |            |        |              |              |                  |               |           |                                 |    | Latitude     | Longitude    |          |     |                |
| 2004 | NB   | Hill Circle | Darjeeling | CAMPA  | Rimbick      | Ramam        | Ramam-3&4        | 2.5mx<br>2.5m | 20.00     | Maya,Dhupi, Champ,Kapasi        | 66 | 27°00'14.2"  | 88°10'12.7"  | 828      | 30  | 14.02.21       |
| 2011 | NB   | Hill Circle | Darjeeling | CAMPA  | Ghoosimana   | Lepchajaga t | Lepchajag at     | 2.5mx<br>2.5m | 5.00      | Pipli,Okhar,Champ,Chiloni       | 75 | 27°10'18.5"  | 88°11'15.5"  | 822      | 21  | 14.02.21       |
| 2011 | NB   | Hill Circle | Darjeeling | CAMPA  | Ghoosimana   | Lepchajaga t | Lepchajag at 1&2 | 2.5mx<br>2.5m | 15.00     | Pipli,Okhar,Cupresseus, Kafol   | 85 | 27°01'23.6"  | 88°11'46.5"  | 828      | 32  | 14.02.21       |
| 2011 | NB   | Hill Circle | Darjeeling | CAMPA  | Teestavalley | Peshok       | Peshok-1         | 2.5mx<br>2.5m | 3.43      | Champ,Kanjali,Garjan,Lampate    | 72 | 27°00'30.2"  | 88°26'19.2"  | 737      | 24  | 18.01.21       |
| 2011 | NB   | Hill Circle | Darjeeling | CAMPA  | Teestavalley | Peshok       | Mangua-1         | 2.5mx<br>2.5m | 3.2918    | Kanjali,Garjan,Lampate,Champ    | 72 | 27°10'30.21" | 88°27'19.51" | 605      | 22  | 18.01.21       |
| 2011 | NB   | Hill Circle | Darjeeling | CAMPA  | Teestavalley | Peshok       | Mangua-1         | 2.5mx<br>2.5m | 3.3362    | Champ,Kanjali,Losuni,Gokul      | 78 | 27°03'41.2"  | 88°25'03.1"  | 639      | 23  | 18.01.21       |
| 2011 | NB   | Hill Circle | Darjeeling | CAMPA  | Darjeeling   | Chataidhora  | Poobong-2        | 2.5mx<br>2.5m | 9.72      | H.Chandan,Champ,Cupressus,Pipli | 85 | 26°59'55.6"  | 88°12'09.8"  | 817      | 29  | 28.02.21       |
| 2011 | NB   | Hill Circle | Darjeeling | CAMPA  | Ghoosimana   | Sukhiapokhri | Dungdungi-1      | 2.5mx<br>2.5m | 2.50      | Kafol,Champ,Maya,Okher          | 72 | 26°19'11.8"  | 88°23'11.9"  | 816      | 29  | 14.02.21       |
| 2011 | NB   | Hill Circle | Darjeeling | CAMPA  | Ghoosimana   | Sukhiapokhri | Lapchajag at-1&4 | 2.5mx<br>2.5m | 17.50     | Champ,Mya,Pipli,Okhar           | 80 | 27°13'15.9"  | 88°11'17.1"  | 817      | 21  | 14.02.21       |
| 2016 | NB   | Hill Circle | Darjeeling | CAMPA  | Ghoosimana   | Pokriabong   | Pokriabong       | 2.5mx<br>2.5m | 1.84      | Champ,Kafol,Uttish,Pipli        | 94 | 26°17'19.3"  | 88°19'21.8"  | 283      | 14  | 12.02.21       |
| 2016 | NB   | Hill Circle | Darjeeling | CAMPA  | Ghoosimana   | Pokriabong   | Pokriabong-4     | 2.5mx<br>2.5m | 19.00     | Pipli,Maya,Kafol,Uttish         | 63 | 26°61'14.2"  | 88°59'18.7"  | 257      | 14  | 12.02.21       |
| 2016 | NB   | Hill Circle | Darjeeling | CAMPA  | Ghoosimana   | Sukhiapokhri | Pulungdu ng-2    | 2.5mx<br>2.5m | 0.04      | Kafol,Champ,Pipli,Maya          | 52 | 26°58'54.9"  | 88°09'14.9"  | 365      | 16  | 12.02.21       |

CAMPA Plantation Monitoring Report, 2020-21 (NB)

|                      |    |             |            |       |             |         |          |               |                     |   |    |            |            |     |     |          |
|----------------------|----|-------------|------------|-------|-------------|---------|----------|---------------|---------------------|---|----|------------|------------|-----|-----|----------|
| 2018                 | NB | Hill Circle | Darjeeling | CAMPA | Tistavalley | Peshoke | Mangua-1 | 2.5mx<br>2.5m | 0.64                | Garjon, Panis<br>aj, Chalta, Chi<br>krasi | 85 | 27°04'020" | 88°25'321" | 180 | --- | 05.01.21 |
| <b>Grand Total:-</b> |    |             |            |       |             |         |          |               | <b>101.2<br/>98</b> |   |    |            |            |     |     |          |

**Division - Kalimpong  
Monitoring Report 2020-21 ( CAMPA )**

| Year                 | Zone | Circle      | Division  | Scheme | Range | Beat       | Location | Spacing   | Area (Ha)    | Major Species tried              | SP | GPS Reading |             | Ht. (cm) | BHG | Date of Survey |
|----------------------|------|-------------|-----------|--------|-------|------------|----------|-----------|--------------|----------------------------------|----|-------------|-------------|----------|-----|----------------|
|                      |      |             |           |        |       |            |          |           |              |                                  |    | Latitude    | Longitude   |          |     |                |
| 2020                 | NB   | Hill Circle | Kalimpong | CAMPA  | Neora | Gorubathan | Mal - 9  | 2.5mx2.5m | 20.66        | Champ, Sal, Chikrasi, Jarul      | 99 | 26°55'67.8" | 88°40'0.55" | 88       | --- | 19.02.2021     |
| 2020                 | NB   | Hill Circle | Kalimpong | CAMPA  | Neora | Burikhola  | Mal - 5  | 2.5mx2.5m | 15.00        | Champ, Chikrasi, Jarul, Mehogoni | 97 | 26°55'59.5" | 88°44'019"  | 90       | --- | 20.02.2021     |
| 2020                 | NB   | Hill Circle | Kalimpong | CAMPA  | Neora | Burikhola  | Mal - 4  | 2.5mx2.5m | 10.00        | Jarul, Sal, Tun, Champ           | 96 | 26°55'89.0" | 88°44'97.6" | 83       | --- | 18.02.2021     |
| <b>Grand Total:-</b> |      |             |           |        |       |            |          |           | <b>45.66</b> |                                  |    |             |             |          |     |                |

**Division - Kurseong Forest  
Monitoring Report 2020-21 ( CAMPA )**

| Year                 | Zone | Circle      | Division | Scheme | Range  | Beat      | Location  | Spacing   | Area (Ha)    | Major Species tried        | SP | GPS Reading |             | Ht. (cm) | BHG | Date of Survey |
|----------------------|------|-------------|----------|--------|--------|-----------|-----------|-----------|--------------|----------------------------|----|-------------|-------------|----------|-----|----------------|
|                      |      |             |          |        |        |           |           |           |              |                            |    | Latitude    | Longitude   |          |     |                |
| 2019                 | NB   | Hill Circle | Kurseong | CAMPA  | Sevoke | Kalijhora | Setikhola | 2.5mx2.5m | 5.04         | Champ, Maya, Kafal, Chalta | 90 | 26°56'53.4" | 88°25'04.1" | 110      | --- | 08.01.2021     |
| 2019                 | NB   | Hill Circle | Kurseong | CAMPA  | Sevoke | Birrik    | Kundung   | 2.5mx2.5m | 11.50        | Champ, kafal, Maya, Jarul  | 85 | 26°56'21.7" | 88°26'20.0" | 125      | --- | 08.01.2021     |
| <b>Grand Total:-</b> |      |             |          |        |        |           |           |           | <b>16.54</b> |                            |    |             |             |          |     |                |

## DETAILED MONITORING REPORT OF NORTHERN CIRCLE

| Division - Jalpaiguri Forest<br>Monitoring Report 2020-21 ( CAMPA ) |      |                 |            |        |         |           |               |         |               |                                   |    |             |             |      |     |                |
|---|------|-----------------|------------|--------|---------|-----------|---------------|---------|---------------|-----------------------------------|----|-------------|-------------|------|-----|----------------|
| Year  | Zone | Circle          | Division   | Scheme | Range   | Beat      | Location      | Spacing | Area (HA)     | Major Species tried               | SP | GPS Reading |             | Ht.  | BHG | Date of Survey |
|   |      |                 |            |        |         |           |               |         |               |                                   |    | Latitude    | Longitude   | (cm) |     |                |
| 2011  | NB   | Northern Circle | Jalpaiguri | CAMPA  | Chalsha | Nagrakata | Hillajhora-2b | 2m x 2m | 7.062         | Minjiri, Pakasaj, Jarul, Chikrasi | 36 | 26°53'34.7" | 88°53'22.2" | 569  | 25  | 20.02.21       |
| 2011  | NB   | Northern Circle | Jalpaiguri | CAMPA  | Chalsha | Nagrakata | Hilla-4b      | 2m x 2m | 12.00         | Khair, Gokul, Teak                | 24 | 26°51'53.1" | 88°53'45.7" | 786  | 32  | 20.02.21       |
| 2019  | NB   | Northern Circle | Jalpaiguri | CAMPA  | Diana   | Karron    | N Diana       | 2m x 2m | 8.06          | Khair, Sirish                     | 84 | 26°53'33.8" | 89°03'35.4" | 162  |     | 10.01.21       |
| <b>Grand Total :-</b>   |      |                 |            |        |         |           |               |         | <b>27.122</b> |                                   |    |             |             |      |     |                |

| Division - Baikunthapur Forest<br>Monitoring Report 2020-21 ( CAMPA ) |      |                 |              |        |          |          |                          |           |              |                                |    |             |             |      |      |                |
|---|------|-----------------|--------------|--------|----------|----------|--------------------------|-----------|--------------|--------------------------------|----|-------------|-------------|------|------|----------------|
| Year  | Zone | Circle          | Division     | Scheme | Range    | Beat     | Location                 | Spacing   | Area (Ha)    | Major Species tried            | SP | GPS Reading |             | Ht.  | BH G | Date of Survey |
|   |      |                 |              |        |          |          |                          |           |              |                                |    | Latitude    | Longitude   | (cm) |      |                |
| 2020  | NB   | Northern Circle | Baikunthapur | CAMPA  | Targhera | Targhera | PurbaTotegaon, Gajoldoba | 2.5mx2.5m | 30.00        | Sissoo, Khair, Pakasaj, Karanj | 95 | 26°51'33.7" | 88°30'25.2' | 88   | ---  | 07.01.2021     |
| <b>Grand Total :-</b>   |      |                 |              |        |          |          |                          |           | <b>30.00</b> |                                |    |             |             |      |      |                |

## DETAILED MONITORING REPORT OF NORTH-WEST CIRCLE

| Division -Malda<br>Monitoring Report 2020-21 ( CAMPA ) |      |            |          |        |        |          |           |           |             |                         |    |             |             |      |     |                |
|--|------|------------|----------|--------|--------|----------|-----------|-----------|-------------|-------------------------|----|-------------|-------------|------|-----|----------------|
| Year   | Zone | Circle     | Division | Scheme | Range  | Beat     | Location  | Spacing   | Area (Ha)   | Major Species tried     | SP | GPS Reading |             | Ht.  | BHG | Date of Survey |
|  |      |            |          |        |        |          |           |           |             |                         |    | Latitude    | Longitude   | (cm) |     |                |
| 2020   | NB   | North-West | Malda    | CAMPA  | Gazole | Singabad | Balisimla | 2.5mx2.5m | 2.00        | Arjun, Akashmani, Jarul | 95 | 24°55'34.1" | 88°18'53.1" | 138  | --- | 07.01.2021     |
| <b>Grand Total :-</b>                                  |      |            |          |        |        |          |           |           | <b>2.00</b> |                         |    |             |             |      |     |                |

**DETAILED MONITORING REPORT OF RESEARCH CIRCLE****Division -Silviculture (North)  
Monitoring Report 2020-21 ( CAMPA )**

| Year                  | Zone | Circle          | Division             | Scheme | Range         | Beat        | Location    | Spacing   | Area (Ha)   | Major Species tried | SP | GPS Reading |             | Ht.  | BHG | Date of Survey |
|-----------------------|------|-----------------|----------------------|--------|---------------|-------------|-------------|-----------|-------------|---------------------|----|-------------|-------------|------|-----|----------------|
|                       |      |                 |                      |        |               |             |             |           |             |                     |    | Latitude    | Longitude   | (cm) |     |                |
| 2019                  | NB   | Research Circle | Silviculture (North) | Campa  | Salugarah Lab | Headquarter | Dabgram - 9 | 2.5mx2.0m | 4.00        | Sissoo              | 87 | 26°45'26.6" | 88°27'47.0" | 102  | --- | 08.01.2021     |
| <b>Grand Total :-</b> |      |                 |                      |        |               |             |             |           | <b>4.00</b> |                     |    |             |             |      |     |                |

**Division -Silviculture (Hills)  
Monitoring Report 2020-21 ( CAMPA )**

| Year                  | Zone | Circle          | Division          | Scheme | Range                         | Beat | Location   | Spacing   | Area (Ha)   | Major Species tried | SP | GPS Reading |            | Ht.  | BHG | Date of Survey |
|-----------------------|------|-----------------|-------------------|--------|-------------------------------|------|------------|-----------|-------------|---------------------|----|-------------|------------|------|-----|----------------|
|                       |      |                 |                   |        |                               |      |            |           |             |                     |    | Latitude    | Longitude  | (cm) |     |                |
| 2019                  | NB   | Research Circle | Silviculture Hill | Campa  | Kalimpong Upper Hill Research | -    | Kolbong-1b | 2.5mx2.5m | 1.30        | Buk                 | 99 | 27°07'937"  | 88°39'081" | 74   | --- | 07.01.21       |
| <b>Grand Total :-</b> |      |                 |                   |        |                               |      |            |           | <b>1.30</b> |                     |    |             |            |      |     |                |

**DETAILED MONITORING REPORT OF WILD LIFE (N) CIRCLE**

| <b>Division - Gorumara Wild Life<br/>Monitoring Report 2020-21 ( CAMPA )</b> |      |                |               |        |                |            |              |            |              |                                  |    |             |             |      |     |                |
|--|------|----------------|---------------|--------|----------------|------------|--------------|------------|--------------|----------------------------------|----|-------------|-------------|------|-----|----------------|
| Year   | Zone | Circle         | Division      | Scheme | Range          | Beat       | Location     | Spacing    | Area (Ha)    | Major Species tried              | SP | GPS Reading |             | Ht.  | BHG | Date of Survey |
|  |      |                |               |        |                |            |              |            |              |                                  |    | Latitude    | Longitude   | (cm) |     |                |
| 2019   | NB   | WildLife North | Goruma ra W/L | CAMPA  | Gorumara North | Murti      | BM-1         | 2.5mx 2.5m | 10.00        | Amloki, Bahera, Chalta, Sindure  | 54 | 26°49'48.3" | 88°49'54.9' | 92   | --- | 10.01.21       |
| 2019   | NB   | WildLife North | Goruma ra W/L | CAMPA  | Gorumara North | Chapramari | Chapramari-2 | 2.5mx 2.5m | 10.00        | Arjun, Sindure, Chalta, Chikrasi | 39 | 26°54'41.4" | 88°50'21.0' | 85   | --- | 10.01.21       |
| 2019   | NB   | WildLife North | Goruma ra W/L | CAMPA  | Gorumara South | Budhu ram  | Barahati-3   | 2.5mx 2.5m | 6.00         | Chalta, Sindure, Kumbhi, Latore  | 26 | 26°44'18.0" | 88°50'31.6' | 78   | --- | 11.01.21       |
| 2019   | NB   | WildLife North | Goruma ra W/L | CAMPA  | Gorumara South | Dhupj hora | Dhupjhora-1b | 2.5mx 2.5m | 12.00        | Sindure, Jam, Latore, Pitali     | 29 | 26°48'50.6" | 88°50'02.0' | 88   | --- | 11.01.21       |
| 2019   | NB   | WildLife North | Goruma ra W/L | CAMPA  | Gorumara South | Goru mara  | Dhupjhora-1a | 2.5mx 2.5m | 2.00         | Chalta, Sindure, Kumbhi, Latore  | 51 | 26°47'23.9" | 88°51'23.0' | 74   | --- | 11.01.21       |
| <b>Grand Total :-</b>  |      |                |               |        |                |            |              |            | <b>40.00</b> |                                  |    |             |             |      |     |                |

| <b>Division - Jaldapara Wild Life<br/>Monitoring Report 2020-21 ( CAMPA )</b> |      |                 |                     |        |                |      |          |           |             |                     |    |             |             |      |     |                |
|---|------|-----------------|---------------------|--------|----------------|------|----------|-----------|-------------|---------------------|----|-------------|-------------|------|-----|----------------|
| Year  | Zone | Circle          | Division            | Scheme | Range          | Beat | Location | Spacing   | Area (Ha)   | Major Species tried | SP | GPS Reading |             | Ht.  | BHG | Date of Survey |
|   |      |                 |                     |        |                |      |          |           |             |                     |    | Latitude    | Longitude   | (cm) |     |                |
| 2014  | NB   | Wildlife Circle | Jaldapara Wild Life | CAMPA  | Jaldapara West | TEC  | Torsha-1 | 2.5mx2.5m | 6.37        | ---                 | 0  | 26°37'03.9" | 89°17'20.1" | 0    | --- | 26.02.21       |
| <b>Grand Total :-</b>   |      |                 |                     |        |                |      |          |           | <b>6.37</b> |                     |    |             |             |      |     |                |



**DETAILED MONITORING REPORT OF BUXA TIGER RESERVE CIRCLE****Division - Buxa Tiger Reserve(East)  
Monitoring Report 2020-21 ( CAMPA )**

| Year                  | Zone | Circle     | Division   | Scheme | Range       | Beat        | Location | Spacing | Area (Ha)    | Major Species tried               | SP | GPS Reading |             | Ht.  | BHG | Date of Survey |
|-----------------------|------|------------|------------|--------|-------------|-------------|----------|---------|--------------|-----------------------------------|----|-------------|-------------|------|-----|----------------|
|                       |      |            |            |        |             |             |          |         |              |                                   |    | Latitude    | Longitude   | (cm) |     |                |
| 2017                  | NB   | BTR Circle | BTR (East) | CAMPA  | South Rydak | MKT         | MKT-1    | 1mx1m   | 10.00        | Chepti, Dhadda                    | 63 | 26°35'31.7" | 89°46'07.8" | 7    |     | 22.02.21       |
| 2017                  | NB   | BTR Circle | BTR (East) | CAMPA  | South Rydak | South Rydak | SRD-4    | 1mx1m   | 10.00        | Chepti, Dhadda                    | 84 | 26°33'44.5" | 89°43'37.4" | 7    |     | 22.02.21       |
| 2020                  | NB   | BTR Circle | BTR (East) | CAMPA  | South Rydak | South Rydak | Dhowla-2 | 2mx2m   | 12.00        | Panisaj, Arjun, Kainjal, Bahera   | 91 | 26°34'28.8" | 89°93'12.1" | 64   | --- | 04.01.21       |
| 2020                  | NB   | BTR Circle | BTR (East) | CAMPA  | South Rydak | South Rydak | Dhowla-1 | 2mx2m   | 21.00        | Arjun, Kainjal, Haritaki, Panisaj | 88 | 26°36'08.5" | 89°91'10.2" | 75   | --- | 22.02.21       |
| <b>Grand Total :-</b> |      |            |            |        |             |             |          |         | <b>53.00</b> |                                   |    |             |             |      |     |                |

**Division - Buxa Tiger Reserve(West)  
Monitoring Report 2020-21 ( CAMPA )**

| Year                  | Zone | Circle     | Division   | Scheme | Range             | Beat        | Location     | Spacing | Area (Ha)    | Major Species tried             | SP | GPS Reading |             | Ht.  | BHG | Date of Survey |
|-----------------------|------|------------|------------|--------|-------------------|-------------|--------------|---------|--------------|---------------------------------|----|-------------|-------------|------|-----|----------------|
|                       |      |            |            |        |                   |             |              |         |              |                                 |    | Latitude    | Longitude   | (cm) |     |                |
| 2017                  | NB   | BTR Circle | BTR (West) | CAMPA  | WDPO              | BTR East    | Garam East   | 2mx2m   | 23.50        | Panisaj, Amloki, Kainjal, Jarul | 60 | 26°33'52.4" | 89°31'03.9" | 188  |     | 19.02.21       |
| 2017                  | NB   | BTR Circle | BTR (West) | CAMPA  | Nimati            | East Nimati | NMT-3        | 1m x 1m | 10.00        | Dhadda, Chepti                  | 68 | 26°37'46.7" | 89°27'31.1" | 7    |     | 21.02.21       |
| 2017                  | NB   | BTR Circle | BTR (West) | CAMPA  | West Rajavatkhawa | NRVK        | SRVK - 2     | 1m x 1m | 10.00        | Dhadda, Chepti                  | 60 | 26°39'23.2" | 89°32'47.6" | 7    |     | 20.02.21       |
| 2018                  | NB   | BTR Circle | BTR (West) | CAMPA  | WDPO              | Gorom       | Gorom Poro-8 | 2mx2m   | 23.00        | Arjun, Panisaj, Pakasaj, Jarul  | 65 | 26°33'54.7" | 89°29'30.9" | 242  |     | 05.01.21       |
| <b>Grand Total :-</b> |      |            |            |        |                   |             |              |         | <b>66.50</b> |                                 |    |             |             |      |     |                |



Division-BTR (E) ,Range-South Rydak, Beat-South Rydak, Block-Dhawla-2, Area-12.0ha,Yr.-2018.



Division-BTR (W) ,Range- West Damanpur, Beat- Garam West, Block- Poro-8, Area-23.0ha,Yr.-2017.





Division-BTR (E) ,Range- South Rydak, Beat- South Rydak, Block- MKT-1, Area-10.0ha,Yr.-2017.



Division-Coochbehar ,Range-Pundibari, Beat-Pundibari HQ, Block- Chhat Singimari, Area-1.564ha,Yr.-2018.

## CHAPTER - III

### MONITORING OF CAMPA PLANTATIONS IN SOUTH BENGAL

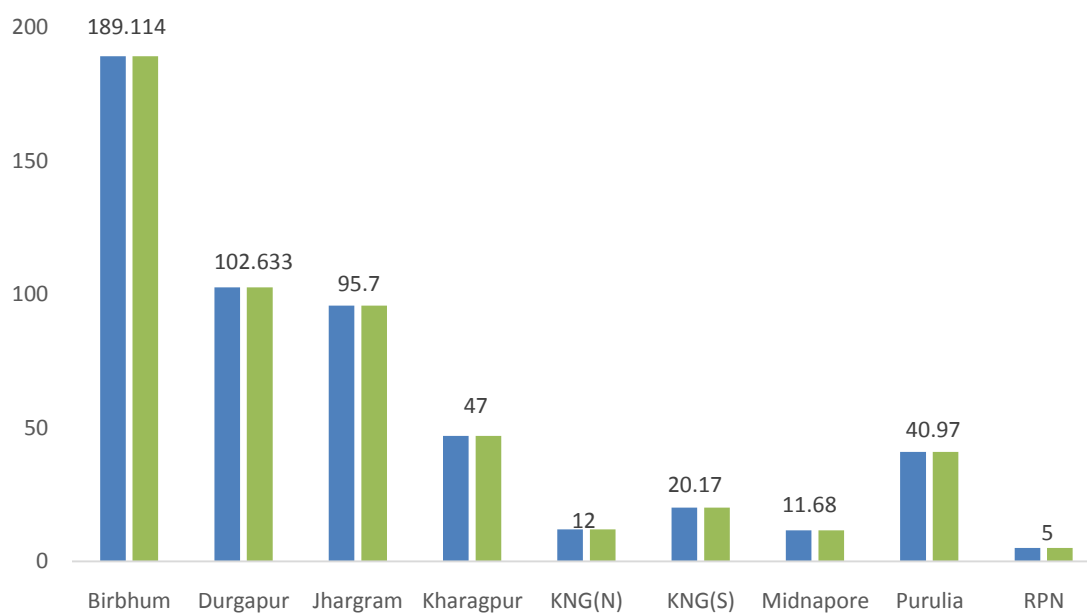
#### i) AREA STATEMENT

Area in Ha.

| Sl. No.         | Division  | 1st Time Monitoring (2020-21) |                |               |               |                 |                     |
|-----------------|-----------|-------------------------------|----------------|---------------|---------------|-----------------|---------------------|
|                 |           | Total Area (Ha)               |                |               |               | Total Area (Ha) | Monitored Area (Ha) |
|                 |           | 2017                          | 2018           | 2019          | 2020          |                 |                     |
| 1               | Birbhum   |                               | 17.99          | 170           | 1.124         | 189.114         | 189.114             |
| 2               | Durgapur  |                               | 52.633         | 50            |               | 102.633         | 102.633             |
| 3               | Jhargram  |                               | 85.7           | 10            |               | 95.7            | 95.7                |
| 4               | Kharagpur | 25                            |                |               | 22            | 47              | 47                  |
| 5               | KNG(N)    | 3                             | 4              | 5             |               | 12              | 12                  |
| 6               | KNG(S)    |                               |                | 20.17         |               | 20.17           | 20.17               |
| 7               | Midnapore | 4.08                          |                | 7.6           |               | 11.68           | 11.68               |
| 8               | Purulia   |                               | 25.97          | 15            |               | 40.97           | 40.97               |
| 9               | RPN       | 1                             |                | 4             |               | 5               | 5                   |
| <b>G. Total</b> |           | <b>33.08</b>                  | <b>186.293</b> | <b>281.77</b> | <b>23.124</b> | <b>524.267</b>  | <b>524.267</b>      |

Table-1

### Area Statement for 1st time Monitoring of CAMPA Plantations



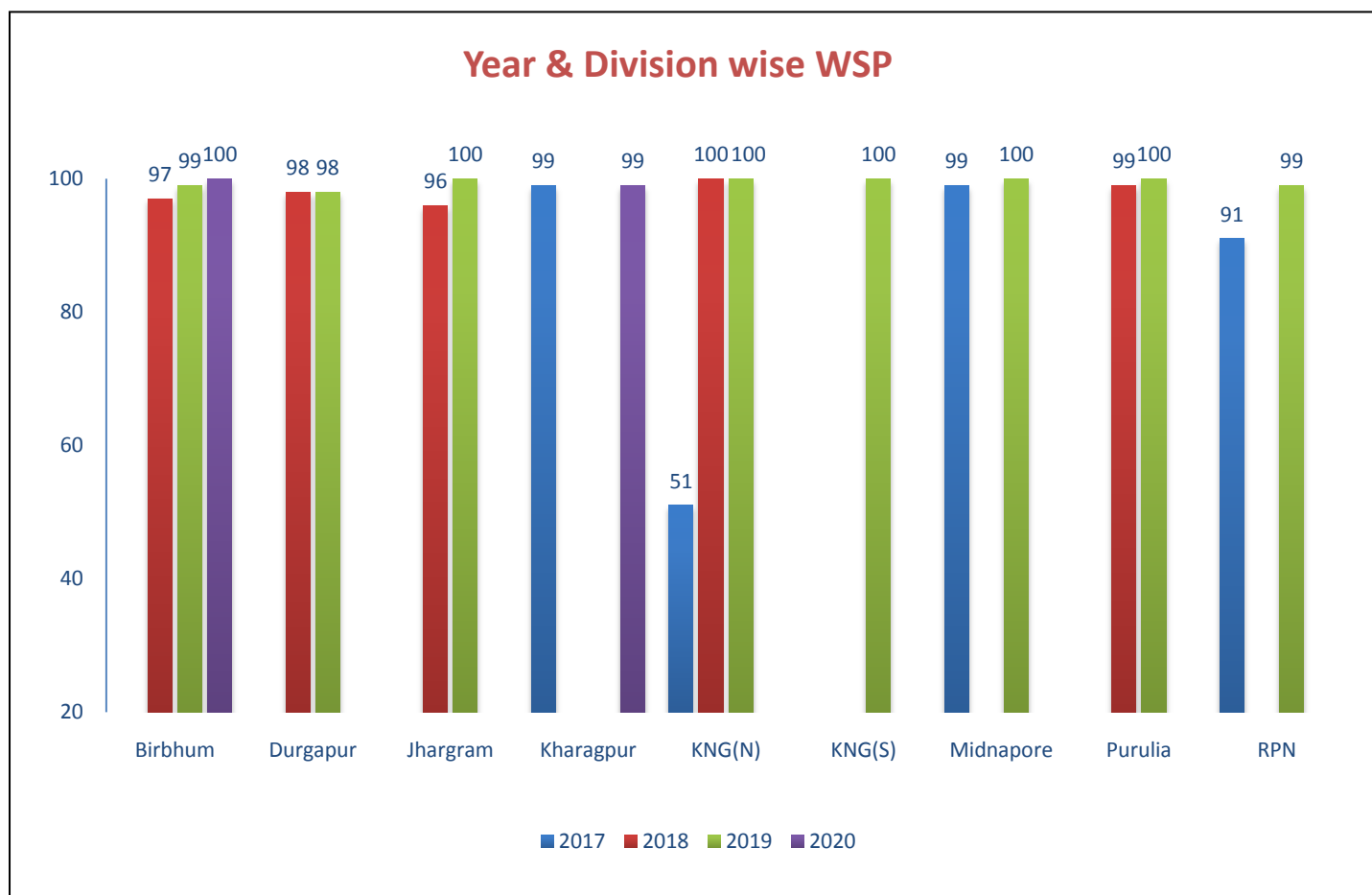
ii) WEIGHTED SURVIVAL PERCENTAGE -

Year & Divisionwise Weighted Survival Percentage (1<sup>st</sup> year plantation)

Area in Ha.

| Division     | 2017         |           | 2018           |           | 2019          |           | 2020          |           | Total Area (Ha) | Division wise WSP |
|--------------|--------------|-----------|----------------|-----------|---------------|-----------|---------------|-----------|-----------------|-------------------|
|              | Area         | WSP       | Area           | WSP       | Area          | WSP       | Area          | WSP       |                 |                   |
| Birbhum      |              |           | 17.99          | 97        | 170           | 99        | 1.124         | 100       | 189.114         | 99                |
| Durgapur     |              |           | 52.633         | 98        | 50            | 98        |               |           | 102.633         | 98                |
| Jhargram     |              |           | 85.7           | 96        | 10            | 100       |               |           | 95.7            | 96                |
| Kharagpur    | 25           | 99        |                |           |               |           | 22            | 99        | 47              | 99                |
| KNG(N)       | 3            | 51        | 4              | 100       | 5             | 100       |               |           | 12              | 88                |
| KNG(S)       |              |           |                |           | 20.17         | 100       |               |           | 20.17           | 100               |
| Midnapore    | 4.08         | 99        |                |           | 7.6           | 100       |               |           | 11.68           | 100               |
| Purulia      |              |           | 25.97          | 99        | 15            | 100       |               |           | 40.97           | 99                |
| RPN          | 1            | 91        |                |           | 4             | 99        |               |           | 5               | 97                |
| <b>Total</b> | <b>33.08</b> | <b>95</b> | <b>186.293</b> | <b>97</b> | <b>281.77</b> | <b>99</b> | <b>23.124</b> | <b>99</b> | <b>524.267</b>  | <b>98</b>         |

Table No. 2



## Overall WSP

Area in Ha.

| Year                 | Area   | WSP |
|----------------------|--------|-----|
| 1 <sup>st</sup> Year | 524.26 | 98  |

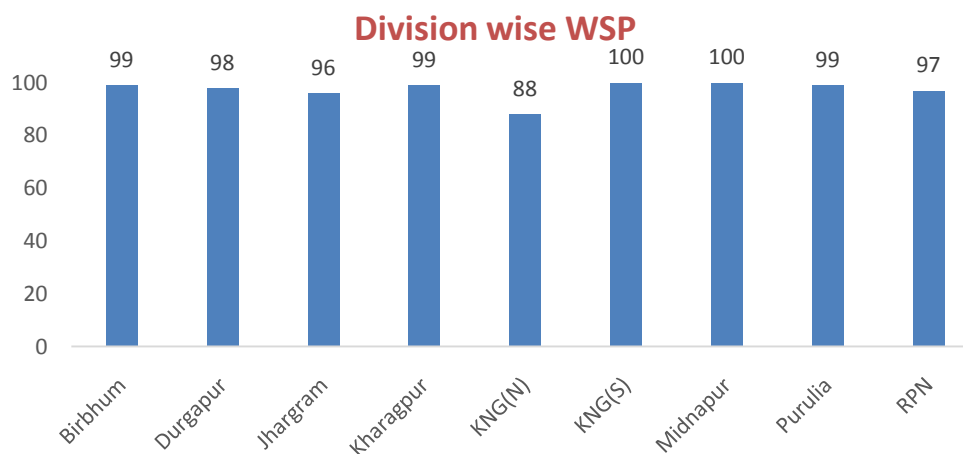
Table -3

## Division & Scheme wise Weighted Survival Percentage (1<sup>st</sup> year plantation)

Area in Ha.

| Division     | Misc.         |           | QGS            |           | Sal          |            | Total Area (Ha) | Division wise WSP |
|--------------|---------------|-----------|----------------|-----------|--------------|------------|-----------------|-------------------|
|              | Area          | WSP       | Area           | WSP       | Area         | WSP        |                 |                   |
| Birbhum      | 1.124         | 100       | 187.99         | 99        |              |            | 189.114         | 99                |
| Durgapur     |               |           | 102.633        | 98        |              |            | 102.633         | 98                |
| Jhargram     | 21            | 99        | 74.7           | 96        |              |            | 95.7            | 96                |
| Kharagpur    |               |           | 47             | 99        |              |            | 47              | 99                |
| KNG(N)       |               |           | 3              | 51        | 9            | 100        | 12              | 88                |
| KNG(S)       |               |           |                |           | 20.17        | 100        | 20.17           | 100               |
| Midnapur     | 11.68         | 100       |                |           |              |            | 11.68           | 100               |
| Purulia      |               |           | 30.97          | 99        | 10           | 100        | 40.97           | 99                |
| RPN          |               |           | 4              | 99        | 1            | 91         | 5               | 97                |
| <b>Total</b> | <b>33.804</b> | <b>99</b> | <b>450.293</b> | <b>98</b> | <b>40.17</b> | <b>100</b> | <b>524.267</b>  | <b>98</b>         |

Table -4



### Abstract

- The quantum of plantation comes under category A zone is 98% that means the plantations having survival percentage equal or more than 90%.
- 2% quantum of plantation is in category B zone that means the plantations having survival percentage between 89% to 75%.



## iii) DETAILED MONITORING REPORT OF DIVISIONS -

## Detail monitoring data of South East Circle

Area in Ha.&amp; height in cm.

| Year | Scheme | Circle     | Division | Range     | Beat       | Location         | Area | Key Species                      | SP    | Lat. (N)    | Long. (E)    | Height | Date of Survey               | WC  |
|------|--------|------------|----------|-----------|------------|------------------|------|----------------------------------|-------|-------------|--------------|--------|------------------------------|-----|
| 2018 | QGS    | South East | Birbhum  | Rajnagar  | Aligarh    | Haripur          | 4.99 | Akashmani, Jam                   | 95    | 23°58'51.5" | 087°25'58.5" | 86.84  | 10.11.20                     | Dev |
| 2018 | QGS    | South East | Birbhum  | Ukhra     | Kantaberia | Madhaiganj       | 13   | Akashmani                        | 98    | 23°39'34.7" | 087°19'25.5" | 245.8  | 10.11.20                     | Dev |
| 2019 | QGS    | South East | Birbhum  | Dubrajpur | Khairasole | Dhaolasimul      | 5    | Akashmani, Mahaneem              | 99.75 | 23°51'04.7" | 087°14'53.7" | 150.4  | 07.11.20                     | Dev |
| 2019 | QGS    | South East | Birbhum  | Dubrajpur | Khairasole | Bandhagal        | 15   | Akashmani, Minjiri, Karanj       | 99.65 | 23°51'24.6" | 087°14'42.1" | 128.2  | 20.11.20                     | Dev |
| 2019 | QGS    | South East | Birbhum  | Dubrajpur | Khairasole | Bhagabandh       | 15.5 | Akashmani, Karanj                | 99.65 | 23°48'27.7" | 087°16'54.7" | 145.9  | 06.11.20                     | Dev |
| 2019 | QGS    | South East | Birbhum  | Dubrajpur | Bakreswar  | Pratappur Rampur | 60   | Akashmani, Karanj, Sissao, Arjun | 99    | 23°52'29.3" | 087°19'20.7" | 128.7  | 3.11.20, 4.11.20, 5.11.20    | Dev |
| 2019 | QGS    | South East | Birbhum  | Dubrajpur | Rasa       | Geruapahari      | 9.5  | Akashmani, Sissao                | 99.83 | 23°51'12.2" | 087°07'51.0" | 123.4  | 06.11.20                     | Dev |
| 2019 | QGS    | South East | Birbhum  | Rajnagar  | Aligarh    | Kanmora          | 17   | Akashmani, Karanj                | 98    | 23°59'23.1" | 087°23'17.9" | 142.4  | 02.11.20                     | Dev |
| 2019 | QGS    | South East | Birbhum  | Rajnagar  | Aligarh    | Lowberia         | 48   | Akashmani, Karanj, Sissao, Arjun | 98    | 24°01'22.6" | 087°19'38.3" | 100.1  | 18.11.20, 19.11.20, 20.11.20 | Dev |

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| Year | Scheme | Circle     | Division | Range       | Beat       | Location            | Area   | Key Species                   | SP    | Lat. (N)                 | Long. (E)                 | Height | Date of Survey | WC  |
|------|--------|------------|----------|-------------|------------|---------------------|--------|-------------------------------|-------|--------------------------|---------------------------|--------|----------------|-----|
| 2020 | Misc.  | South East | Birbhum  | Bolpur      | Illambazar | JoydebKenduli       | 1.124  | Sissao, Simul, Karanj, Amlaki | 100   | 23 <sup>0</sup> 38'20.3" | 087 <sup>0</sup> 26'11.4" | 71.31  | 05.11.20       | Dev |
| 2018 | QGS    | South East | Durgapur | Ukhra       | Tilaboni   | Banggora            | 20.633 | Akashmani, Karanj, Neem       | 98.5  | 23 <sup>0</sup> 36'51.0" | 087 <sup>0</sup> 18'03.7" | 205.3  | 12.11.20       | Dev |
| 2018 | QGS    | South East | Durgapur | Ukhra       | Tilaboni   | Banggora            | 10     | Akashmani, Karanj, Neem       | 98.41 | 23 <sup>0</sup> 36'51.0" | 087 <sup>0</sup> 18'03.7" | 184    | 13.11.20       | Dev |
| 2018 | QGS    | South East | Durgapur | Ukhra       | Tilaboni   | Parulia             | 10     | Akashmani, Karanj             | 98    | 23 <sup>0</sup> 36'26.1" | 087 <sup>0</sup> 19'19.2" | 190.2  | 11.11.20       | Dev |
| 2018 | QGS    | South East | Durgapur | Ukhra       | Kantaberia | Srikrishnapur       | 12     | Akashmani, Karanj             | 98    | 23 <sup>0</sup> 39'51.3" | 087 <sup>0</sup> 21'39.5" | 186.7  | 11.11.20       | Dev |
| 2019 | QGS    | South East | Durgapur | Asansol (T) | Mongalpur  | Tirat               | 7.5    | Akashmani, Karanj             | 94    | 23 <sup>0</sup> 37'43.2" | 087 <sup>0</sup> 03'23.8" | 84.26  | 22.11.20       | Dev |
| 2019 | QGS    | South East | Durgapur | Asansol (T) | Mongalpur  | Mamudpur            | 12.5   | Akashmani, Karanj             | 95.75 | 23 <sup>0</sup> 40'49.8" | 087 <sup>0</sup> 07'39.3" | 67.62  | 22.11.20       | Dev |
| 2019 | QGS    | South East | Durgapur | Ukhra       | Tilaboni   | Banggora            | 20     | Akashmani, Karanj, Sissao     | 99.5  | 23 <sup>0</sup> 37'37.1" | 087 <sup>0</sup> 18'22.7" | 134.2  | 21.11.20       | Dev |
| 2019 | QGS    | South East | Durgapur | Ukhra       | Kantaberia | Dhabani (Labnapara) | 5      | Akashmani, Karanj             | 98.5  | 23 <sup>0</sup> 35'47.8" | 087 <sup>0</sup> 22'08.8" | 169.2  | 07.11.20       | Dev |
| 2019 | QGS    | South East | Durgapur | Ukhra       | Kantaberia | Dhabani             | 5      | Akashmani, Karanj             | 99.87 | 23 <sup>0</sup> 35'06.2" | 087 <sup>0</sup> 22'26.5" | 108.2  | 07.11.20       | Dev |



## Detail monitoring data of South West Circle

Area in Ha.& height in cm.

| Year | Scheme | Circle     | Division | Range               | Beat                | Location     | Area  | Key Species                   | SP  | Lat. (N)                  | Long. (E)                  | Height | Date of Survey | WC  |
|------|--------|------------|----------|---------------------|---------------------|--------------|-------|-------------------------------|-----|---------------------------|----------------------------|--------|----------------|-----|
| 2017 | QGS    | South West | KNG(N)   | Raghunathpur        | Raghunathpur-II     | Murabag      | 3     | Karanj, Simul, Sissao, Challa | 51  | 23 <sup>o</sup> 37'21.48" | 086 <sup>o</sup> 31'06.28" | 108    | 23.11.20       | Dev |
| 2018 | Sal    | South West | KNG(N)   | Raghunathpur        | Santuri             | Maharajhagar | 4     | Sal                           | 100 | 23 <sup>o</sup> 34'37.61" | 086 <sup>o</sup> 44'36.32" | 143    | 23.11.20       | Dev |
| 2019 | Sal    | South West | KNG(N)   | Hura                | Hura                | Ledadi       | 3     | Sal                           | 100 | 23 <sup>o</sup> 15'20.30" | 086 <sup>o</sup> 39'48.74" | 92     | 24.11.20       | Dev |
| 2019 | Sal    | South West | KNG(N)   | Puncha              | Puncha              | Chatalalpur  | 2     | Sal, Daka                     | 100 | 23 <sup>o</sup> 13'06.18" | 086 <sup>o</sup> 37'53.03" | 52     | 24.11.20       | Sal |
| 2019 | Sal    | South West | KNG(S)   | Bandwan-I           | Bandwan             | Ghagra       | 3     | Sal, Jam, Arjun               | 100 | 22 <sup>o</sup> 49'11.06" | 086 <sup>o</sup> 34'02.88" | 80     | 05.12.20       | Dev |
| 2019 | Sal    | South West | KNG(S)   | Bandwan-I           | Bandwan             | Patkati      | 2     | Sal, Jam, Arjun, Bahera       | 100 | 22 <sup>o</sup> 49'13.47" | 086 <sup>o</sup> 28'51.61" | 48     | 25.11.20       | Sal |
| 2019 | Sal    | South West | KNG(S)   | Jamvna              | Nanna               | Harada       | 5     | Sal, Jam, Kusum, Bahera       | 100 | 22 <sup>o</sup> 47'11.53" | 086 <sup>o</sup> 34'55.03" | 75     | 25.11.20       | Sal |
| 2019 | Sal    | South West | KNG(S)   | Manbazar-I          | Sindurpur           | Majhijira    | 5.17  | Sal, Jam, Simul               | 100 | 23 <sup>o</sup> 05'35.06" | 086 <sup>o</sup> 32'29.25" | 95     | 28.11.20       | Dev |
| 2019 | Sal    | South West | KNG(S)   | Manbazar-I          | Sindurpur           | Janara       | 5     | Sal, Mohul, Kusum             | 100 | 23 <sup>o</sup> 03'00.62" | 086 <sup>o</sup> 31'38.91" | 54     | 28.11.20       | Dev |
| 2018 | QGS    | South West | Purulia  | Jhalda              | Kalma               | Ichahatu-II  | 25.97 | Akashmani, Jam, Neem, Arjun   | 99  | 23 <sup>o</sup> 28'20.60" | 086 <sup>o</sup> 53'19.09" | 145    | 26.11.20       | Dev |
| 2019 | Sal    | South West | Purulia  | Arsha               | Kantadih            | Rajpati-70   | 5     | Sal, Simul, Pea sal           | 100 | 23 <sup>o</sup> 14'36.66" | 086 <sup>o</sup> 13'20.80" | 70     | 27.11.20       | Sal |
| 2019 | Sal    | South West | Purulia  | Kotsila             | Murguma             | Jaharhatu    | 5     | Sal                           | 100 | 23 <sup>o</sup> 20'19.77" | 086 <sup>o</sup> 02'11.55" | 70     | 27.11.20       | Dev |
| 2019 | QGS    | South West | Purulia  | PuruliaSilviculture | PuruliaSilviculture | Lakshmanpur  | 5     | Akashmani                     | 100 | 23 <sup>o</sup> 20'48.8"  | 086 <sup>o</sup> 33'40.18" | 112    | 24.11.20       | Dev |

## Detail monitoring data of Western Circle

Area in Ha.& height in cm.

| Year | Scheme | Circle  | Division  | Range      | Beat       | Location        | Area | Key Species                              | SP    | Lat. (N)    | Long. (E)    | Height | Date of Survey        | WC  |
|------|--------|---------|-----------|------------|------------|-----------------|------|--|-------|-------------|--------------|--------|-----------------------|-----|
| 2018 | Misc.  | Western | Jhargram  | Jamboni    | Bhaluka    | KJ-286          | 11   | Akashmoni,<br>Neem,<br>Karanj,<br>Challa | 98.08 | 22°21'28.4" | 086°54'05.6" | 101    | 07.11.20              | Dev |
| 2018 | QGS    | Western | Jhargram  | Manikpara  | Kusumghati | Louriadam       | 23   | Akashmoni,<br>Arjun,<br>Amloki,<br>Neem  | 94.96 | 22°22'36.4" | 087°04'13.3" | 196    | 03.11.20,<br>04.11.20 | Dev |
| 2018 | QGS    | Western | Jhargram  | Manikpara  | Kusumghati | Louriadam-671   | 16   | Akashmoni                                | 91.65 | 22°22'36.4" | 087°04'13.3" | 210    | 05.11.20              | Dev |
| 2018 | QGS    | Western | Jhargram  | Manikpara  | Balivasa   | Radhashyampur   | 20   | Akashmoni                                | 97.21 | 22°20'57.2" | 087°06'11.3" | 201    | 06.11.20              | Dev |
| 2018 | QGS    | Western | Jhargram  | Parihati   | Ergoda     | Guiara-6        | 15.7 | Akashmoni                                | 99.05 | 22°32'35.5" | 086°50'06.7" | 154    | 01.11.20              | Dev |
| 2019 | Misc.  | Western | Jhargram  | Arabari    | Arabari    | Ghagra-450      | 5    | Peasal                                   | 99.13 | 22°42'52.0" | 087°19'35.6" | 170    | 02.11.20              | Dev |
| 2019 | Misc.  | Western | Jhargram  | Jhargram   | Jhargram   | Amlachati       | 5    | Karam                                    | 100   | 22°22'50.3" | 087°02'42.7" | 126    | 02.11.20              | Dev |
| 2017 | QGS    | Western | Kharagpur | Kalaikunda | Kalaikunda | Arjuni-38       | 25   | Akashmoni                                | 99.4  | 22°21'20.9" | 087°10'57.3" | 291    | 28.10.20,<br>29.10.20 | Dev |
| 2020 | QGS    | Western | Kharagpur | Kalaikunda | Sankrail   | Susnigeria-118  | 22   | Akashmoni                                | 99.04 | 22°14'20.8" | 087°07'44.3" | 103    | 30.10.20              | Dev |
| 2017 | Misc.  | Western | Midnapore | Godapiasal | Ghagrasole | Kulopachhuria   | 4.08 | Chhatim,<br>Kusum,<br>Neem               | 99.38 | 22°31'52.0" | 087°19'04.5" | 167    | 31.10.20              | Dev |
| 2019 | Misc.  | Western | Midnapore | Bhadutola  | Moupal     | Karamarasol-215 | 7.6  | Neem,<br>Mahul,<br>Peasal,<br>Kusum      | 100   | 22°30'15.5" | 087°14'18.6" | 105    | 31.10.20              | Dev |
| 2017 | Sal    | Western | RPN       | Hoomgarh   | Barameshia | Barameshia      | 1    | Jarul, Sal,<br>Neem                      | 90.5  | 22°11'56.6" | 087°20'25.6" | 295    | 08.11.20              | Dev |
| 2019 | QGS    | Western | RPN       | Mahalisai  | Adalia     | Hatimasan       | 4    | Akashmoni                                | 98.75 | 22°48'33.1" | 087°08'14.7" | 175    | 08.11.20              | Dev |



| Year | Scheme | Circle  | Division | Range    | Beat   | Location | Area |
|------|--------|---------|----------|----------|--------|----------|------|
| 2018 | QGS    | Western | Jhargram | Parihati | Ergoda | Guiara-6 | 15.7 |



| Year | Scheme | Circle     | Division | Range        | Beat    | Location     | Area |
|------|--------|------------|----------|--------------|---------|--------------|------|
| 2018 | Sal    | South West | KNG(N)   | Raghunathpur | Santuri | Maharajhagar | 4    |





| Year | Scheme | Circle     | Division | Range | Beat       | Location      | Area |
|------|--------|------------|----------|-------|------------|---------------|------|
| 2018 | QGS    | South East | Durgapur | Ukhra | Kantaberia | Srikrishnapur | 12   |



| Year | Scheme | Circle     | Division | Range  | Beat  | Location    | Area  |
|------|--------|------------|----------|--------|-------|-------------|-------|
| 2018 | QGS    | South West | Purulia  | Jhalda | Kalma | Ichahatu-II | 25.97 |

**ANNEXURE****i. Abbreviations****➤ Necessary Abbreviations against Monitoring (North) Division**

| <b>Sl. No.</b> | <b>Abbreviations</b> | <b>In full form</b>                   |
|----------------|----------------------|---------------------------------------|
| 1              | BKP                  | Baikunthapur                          |
| 2              | BTR(E)               | Buxa Tiger Reserve (East)             |
| 3              | BTR (W)              | Buxa Tiger Reserve (West)             |
| 4              | COB                  | Coochbehar                            |
| 5              | DRJ                  | Darjeeling                            |
| 6              | DRJ (T)              | Darjeeling Territorial Division (GTA) |
| 7              | JPG                  | Jalpaiguri                            |
| 8              | KPG                  | Kalimpong Forest                      |
| 9              | KGN                  | Kurseong Forest                       |
| 10             | GMR WL               | Gorumara Wild Life                    |
| 11             | JPD WL               | Jaldapara Wild Life                   |
| 12             | Avg.                 | Average                               |
| 13             | BHG                  | Breast height girth                   |
| 14             | Dev.                 | Development                           |
| 15             | Fin.                 | Financial                             |
| 16             | GT                   | Grand Total                           |
| 17             | H/L                  | Highest / Lowest                      |
| 18             | PWC                  | Protection Working Circle             |
| 19             | RWC                  | Rehabilitation Working Circle         |
| 20             | SP                   | Survival Percentage                   |
| 21             | WC                   | Working Circle                        |
| 22             | WSP                  | Weighted Survival Percentage          |
| 23             | YOP                  | Year of Plantation                    |
| 24             | WPS                  | Weighted Performance Score            |

➤ **Necessary Abbreviations against Monitoring (South) Division**

### Schemes

| Sl. No. | Abbreviation | Expanded                            |
|---------|--------------|-------------------------------------|
| 1       | Sal          | Forestry Treatment - Sal Plantation |
| 2       | QGS          | Quick Growing Species               |
| 3       | Misc.        | Miscellaneous Species               |

### For the names of the Divisions

| Sl. No. | Abbreviation | Expanded                             | Sl. No. | Abbreviation | Expanded                      |
|---------|--------------|--------------------------------------|---------|--------------|-------------------------------|
| 1       | 24-PGS(N)    | 24 – Parganas (North)                | 11      | KGP          | Kharagpur                     |
| 2       | 24-PGS(S)    | 24 – Parganas (South)                | 12      | KNG(N)       | Kangsabati (North)            |
| 3       | BDN          | Burdwan                              | 13      | KNG(S)       | Kangsabati (South)            |
| 4       | BIR          | Birbhum                              | 14      | MID          | Midnapur                      |
| 5       | BNK(N)       | Bankura (North)                      | 15      | N & M        | Nadia & Murshidabad           |
| 6       | BNK(S)       | Bankura (South)                      | 16      | PMID         | PurbaMedinipur                |
| 7       | DGP          | Durgapur                             | 17      | PNCT         | Panchet                       |
| 8       | EFD          | Extension Forestry Division, Purulia | 18      | PRL          | Purulia                       |
| 9       | HWH          | Howrah Social Forestry               | 19      | RPN          | Rupnarayan                    |
| 10      | JGM          | Jhargram                             | 20      | URF          | Urban & Recreational Forestry |

### Others

| Sl. No. | Abbreviation | Expanded                  | Sl. No. | Abbreviation | Expanded                      |
|---------|--------------|---------------------------|---------|--------------|-------------------------------|
| 1       | Avg.         | Average                   | 10      | RBD          | Randomized Block Design       |
| 2       | BHG          | Breast Height Girth       | 11      | RWC          | Rehabilitation Working Circle |
| 3       | Dev.         | Development               | 12      | SD           | Standard deviation            |
| 4       | Fin.         | Financial                 | 13      | SP           | Survival Percentage           |
| 5       | GT           | Grand Total               | 14      | WC           | Working Circle                |
| 6       | H/L          | Highest / Lowest          | 15      | WPS          | Weighted Performance Score    |
| 7       | PS           | Performance Score         | 16      | WSP          | Weighted Survival %           |
| 8       | PWC          | Protection Working Circle | 17      | YOP          | Year of Plantation            |
| 9       | SD           | Standard Deviation        | 18      | CV           | Coefficient of variation      |

## ii. Calendar of Operations

(O.O. No. 05/PCCF/R&M/2M-4 dt. 6.11.06 read with Memo No. 165-176/PCCF-RMD/2M-4 dated 26.06.2009)

| Date      | Activity  | Action   |
|-----------|---|--|
| April-May | Placement of Fund of CF/Monitoring by PCCF/West Bengal in respect of Directorate Fund                               | CCF Finance  |
| 30th Sept | Regeneration Plan Map along with Plantation Journals (Complete up to date)  | R.O.s of other Divisions to be directed by concerned DFOs to make these available to the R.O.s of Monitoring Divisions |
| 1st Oct   | Placement of Fund to DFO/Monitoring by territorial DFOs in respect of Non-Forest Dept [GoWB] funds [Civil Deposits] | Planting DFOs  |
| 15th Oct  | Starting Field Survey of Plantations  | DFO/Monitoring (North) & DFO/Monitoring (South)  |
| 28th Feb  | Finishing Field Survey of Plantations raised with funds from Forest Dept.   | Do   |
| 31st Mar  | Finishing Field Survey of Plantations raised with funds from civil deposits.  | Do   |
| 10th May  | Circulation of survey data to DFOs for verification & comments.   | Do   |
| 31st May  | Last date of receipt of comments from concerned DFOs/CFs.   | DFOs / CFs   |
| 15th Jul  | Draft Monitoring Report (2 volumes)-Circulation for Comments to DFOs, CFs & CCFs.                                   | DFO/Monitoring (N) & DFO/Monitoring (S)  |
| 31st Jul  | Last Date for Receipt of Comments   | Other DFOs, CFs & CCFs   |
| 15th Aug  | Draft (Power Point) Presentations [2 No. for North & South Bengal] of CF/Monitoring.                                | CF/Monitoring to prepare & CCF/ME & SC to approve  |
| 20th Aug  | (Power Point) Presentations in North Bengal by CF/Monitoring.   | DFO/Monitoring (North) Divn. & CF/MC   |
| 30th Aug  | (Power Point) Presentations in South Bengal by CF/Monitoring.   | DFO/Monitoring (South)Divn. & CF/MC  |
| 15th Sep  | Draft Monitoring Report (2 volumes)   | Vetting by PCCF/RM&D through proper channel  |
| 30th Sep  | Final Report (2 volumes) – Publication and Distribution.  | DFO/Monitoring (N) & DFO/Monitoring (S)  |
| 15th Nov  | Draft State Monitoring Report (1 volume)  | CF/Monitoring to submit to CCF/ME&SC & PCCF/RMD  |
| 30th Nov  | Final State Monitoring Report (1 volume) Publication and Distribution   | CF/Monitoring  |