GIS based Maps of Shrimp & Prawn Gher Areas

SAFETI
Supporting the Bangladesh Shrimp and Prawn Sector
GIS based Maps of Shrimp and Prawn Gher Areas

In twelve Upazilas of Bagerhat, Cox’s Bazar, Jessore, Khulna and Satkhira Districts, Bangladesh

SAFETI

Supporting the Bangladesh Shrimp and Prawn Sector
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About SAFETI

Funded by the U.S. Department of Agriculture (USDA), the Safe Aqua Farming for Economic and Trade Improvement (SAFETI) project, being implemented by Winrock International, is a five-year project working in the southern region of Bangladesh. The objectives of the project are: increasing shrimp and prawn production and national exports; increasing trade and income of supply chain participants – particularly farmers but also input suppliers and others; and, improving the quality of exported shrimp and prawn.
Use of this booklet

This Geographic Information System (GIS) map booklet presents interpreted satellite imagery of gher areas during the months of October/November/December and February/March, 2016 or 2017, covering twelve Upazilas in Bagerhat, Cox’s Bazar, Jessore, Khulna, and Satkhira Districts where the SAFETI project is working. By comparing the two Sentinel-2 (ESA) satellite images of each Upazila, it is possible to identify seasonal changes in land use between paddy, shrimp and prawn-fish production.

SAFETI is using these paired images to help in its identification of the most suitable work areas for project activities, but anticipates also that the collection will be of practical use to a range of Government and development professionals in their own work.
SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector

Upazilas where USDA-SAFETI will be working with small-holder farmers
Bagerhat District

GIS based Gher map of Unions of Bagerhat Sadar Upazila
GIS map of Bagerhat Sadar Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>3rd March 2017</th>
<th>13th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
<td>Agriculture (ha)</td>
</tr>
<tr>
<td>Bagerhat Sadar</td>
<td>31099</td>
<td>2966</td>
<td>2125</td>
</tr>
<tr>
<td></td>
<td>4574</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
Bagerhat Paurashava

November, 2016: Total Gher area: 39 hectare

March, 2017: Total Gher area: 14 hectare
November, 2016: Total Gher area: 1590 hectare

March, 2017: Total Gher area: 555 hectare
Bemarta

November, 2016: Total Gher area: 1430 hectare
March, 2017: Total Gher area: 329 hectare
Bishnupur

November, 2016: Total Gher area: 1711 hectare

March, 2017: Total Gher area: 94 hectare

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November, 2016: Total Gher area: 1062 hectare

March, 2017: Total Gher area: 764 hectare
Gotapara

November, 2016: Total Gher area: 1193 hectare
March, 2017: Total Gher area: 176 hectare
November, 2016: Total Gher area: 702 hectare
March, 2017: Total Gher area: 297 hectare
Karapara

November, 2016: Total Gher area: 324 hectare
March, 2017: Total Gher area: 143 hectare
Khanpur

November, 2016: Total Gher area: 418 hectare
March, 2017: Total Gher area: 14 hectare
Rakhalgachhi

November, 2016: Total Gher area: 430 hectare
March, 2017: Total Gher area: 40 hectare
Bagerhat District

GIS based Gher map of Unions of Chitalmari Upazila
### GIS map of Chitalmari Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>3rd March 2017</th>
<th>13th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
</tr>
<tr>
<td>Chitalmari</td>
<td>19770</td>
<td>8539</td>
<td>2662</td>
</tr>
</tbody>
</table>

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
Barabaria

November, 2016: Total Gher area: 608 hectare

March, 2017: Total Gher area: 61 hectare
Charbanari

November, 2016: Total Gher area: 949 hectare
March, 2017: Total Gher area: 97 hectare
November, 2016: Total Gher area: 3570 hectare

March, 2017: Total Gher area: 2068 hectare
November, 2016: Total Gher area: 1208 hectare
November, 2016: Total Gher area: 47 hectare
Santoshpur

November, 2016: Total Gher area: 958 hectare
March, 2017: Total Gher area: 32 hectare
November, 2016: Total Gher area: 584 hectare

March, 2017: Total Gher area: 402 hectare
Bagerhat District

GIS based Gher map of Unions of Morrelganj Upazila
Map of Morrelganj Upazila with Unions
GIS map of Morrelganj Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>3rd March 2017</th>
<th>13th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
<td>Agriculture (ha)</td>
</tr>
<tr>
<td>Morrelganj</td>
<td>44468</td>
<td>5636</td>
<td>5864</td>
</tr>
</tbody>
</table>
Bohurbunia

November, 2016: Total Gher area: 673 hectare
March, 2017: Total Gher area: 1006 hectare
Boloibunia

November, 2016: Total Gher area: 2 hectare

March, 2017: Total Gher area: 5 hectare
Banagram

November, 2016: Total Gher area: 67 hectare
March, 2017: Total Gher area: 6 hectare
Baroikhali

November, 2016: Total Gher area: 134 hectare

March, 2017: Total Gher area: 556 hectare
Chingrakhali

November, 2016: Total Gher area: 6 hectare
March, 2017: Total Gher area: 0 hectare
Daibanjgati

November, 2016: Total Gher area: 67 hectare
March, 2017: Total Gher area: 12 hectare
Hoglapasha

November, 2016: Total Gher area: 43 hectare

March, 2017: Total Gher area: 9 hectare
Hoglabunia

November, 2016: Total Gher area: 0 hectare
March, 2017: Total Gher area: 6 hectare
November, 2016: Total Gher area: 2437 hectare
March, 2017: Total Gher area: 2468 hectare
November, 2016: Total Gher area: 0 hectare

March, 2017: Total Gher area: 0 hectare
November, 2016: Total Gher area: 6 hectare

March, 2017: Total Gher area: 31 hectare
Morrelganj Paurashava

November, 2016: Total Gher area: 0 hectare
March, 2017: Total Gher area: 109 hectare
Nishanbaria

November, 2016: Total Gher area: 306 hectare

March, 2017: Total Gher area: 1150 hectare
November, 2016: Total Gher area: 74 hectare

March, 2017: Total Gher area: 64 hectare
December, 2016: Total Gher area: 114 hectare
March, 2017: Total Gher area: 51 hectare
Ramchandrapur

November, 2016: Total Gher area: 291 hectare

March, 2017: Total Gher area: 0 hectare
Teligati

November, 2016: Total Gher area: 414 hectare
March, 2017: Total Gher area: 161 hectare
Bagerhat District

GIS based Gher map of Unions of Rampal Upazila
Map of Rampal Upazila with Unions

- Gaurarmba
- Baintola
- Mallikerber
- Ujalkur
- Rampal
- Rajnagar
- Hurka
- Banshtali
- Perikhabi
- Bhojpatia
GIS map of Rampal Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>3rd March 2017</th>
<th>13th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
</tr>
<tr>
<td>Rampal</td>
<td>27899</td>
<td>1490</td>
<td>8206</td>
</tr>
</tbody>
</table>
November, 2016: Total Gher area: 1420 hectare

March, 2017: Total Gher area: 664 hectare
November, 2016: Total Gher area: 924 hectare

March, 2017: Total Gher area: 562 hectare
SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector

Bhojpatia

November, 2016: Total Gher area: 1356 hectare
March, 2017: Total Gher area: 937 hectare
November, 2016: Total Gher area: 1882 hectare  
March, 2017: Total Gher area: 1444 hectare
Hurka

November, 2016: Total Gher area: 1064 hectare

March, 2017: Total Gher area: 913 hectare
November, 2016: Total Gher area: 189 hectare
March, 2017: Total Gher area: 126 hectare
Perikhali

November, 2016: Total Gher area: 884 hectare
March, 2017: Total Gher area: 607 hectare
Rajnagar

November, 2016: Total Gher area: 1626 hectare
March, 2017: Total Gher area: 1411 hectare
November, 2016: Total Gher area: 1945 hectare
March, 2017: Total Gher area: 1504 hectare
Ujalkur

November, 2016: Total Gher area: 771 hectare

March, 2017: Total Gher area: 34 hectare
Cox’s Bazar District

GIS based Gher map of Unions of Chakoria Upazila
Map of Chakoria Upazila with Unions
### GIS map of Chakoria Upazila with Gher and Crop area

#### Table: GIS Map Overview

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>18th February 2017</th>
<th>20th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
</tr>
<tr>
<td>Chakoria</td>
<td>4783.6</td>
<td>3116</td>
<td>6977</td>
</tr>
</tbody>
</table>

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
Badarkhali

November, 2016: Total Gher area: 1015 hectare
February, 2017: Total Gher area: 232 hectare

Legend
- Salt
- Gher

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Barawtali

November, 2016: Total Gher area: 89 hectare
Bheola Manik Char

November, 2016: Total Gher area: 25 hectare

February, 2017: Total Gher area: 264 hectare
Chakoria Paurashava

November, 2016: Total Gher area: 7 hectare
Chiringa

November, 2016: Total Gher area: 3015 hectare

February, 2017: Total Gher area: 2393 hectare
November, 2016: Total Gher area: 222 hectare

February, 2017: Total Gher area: 241 hectare
November, 2016: Total Gher area: 29 hectare
Harbang

November, 2016: Total Gher area: 28 hectare
Kaiarbil

November, 2016: Total Gher area: 71 hectare
November, 2016: Total Gher area: 38 hectares
Khutakhali

November, 2016: Total Gher area: 2573 hectare

February, 2017: Total Gher area: 732 hectare
Konakhal 

Legend

- Gher

November, 2016: Total Gher area: 133 hectare

February, 2017: Total Gher area: 564 hectare
Lakhyarchar

November, 2016: Total Gher area: 9 hectare
Paschim Bara Bheola

November, 2016: Total Gher area: 1146 hectare
February, 2017: Total Gher area: 440 hectare
Purba Bara Bheola

November, 2016: Total Gher area: 24 hectare
February, 2017: Total Gher area: 55 hectare
Saharbil

November, 2016: Total Gher area: 3440 hectare

February, 2017: Total Gher area: 1772 hectare
Jessore District

GIS based Gher map of Unions of Abhoynagar Upazila
Map of Abhoynagar Upazila with Unions

- Prembag
- Neapara Paurashava
- Sundoli
- Sreedharpur
- Baghutia
- Chalishia
- Payra
- Suvorara
- Siddhipasha
### GIS map of Abhoynagar Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>3rd March 2017</th>
<th>13th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
</tr>
<tr>
<td>Abhynagar</td>
<td>24713</td>
<td>6510</td>
<td>3456</td>
</tr>
</tbody>
</table>

**Legend**

- Road
- Cropland
- River
- Gher

**Data Table**

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>3rd March 2017</th>
<th>13th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
</tr>
<tr>
<td>Abhynagar</td>
<td>24713</td>
<td>6510</td>
<td>3456</td>
</tr>
</tbody>
</table>
November, 2016: Total Gher area: 163 hectare

March, 2017: Total Gher area: 46 hectare

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
November, 2016: Total Gher area: 1046 hectare
March, 2017: Total Gher area: 628 hectare
Noapara Paurashava

November, 2016: Total Gher area: 578 hectare
March, 2017: Total Gher area: 410 hectare
Payra

November, 2016: Total Gher area: 1479 hectare

March, 2017: Total Gher area: 847 hectare

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
November, 2016: Total Gher area: 276 hectare

March, 2017: Total Gher area: 156 hectare
November, 2016: Total Gher area: 793 hectare

March, 2017: Total Gher area: 341 hectare
Sreedharpur

November, 2016: Total Gher area: 529 hectare

March, 2017: Total Gher area: 330 hectare

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
November, 2016: Total Gher area: 791 hectare

March, 2017: Total Gher area: 276 hectare
Sundoli

November, 2016: Total Gher area: 604 hectare
March, 2017: Total Gher area: 419 hectare

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Khulna District

GIS based Gher map of Unions of Dumuria Upazila
GIS map of Dumuria Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>18th March 2016</th>
<th>13th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
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<tr>
<td>Dumuria</td>
<td>45673</td>
<td>15237</td>
<td>5824</td>
</tr>
</tbody>
</table>

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
Atalia

November, 2016: Total Gher area: 1798 hectare
March, 2017: Total Gher area: 710 hectare
November, 2016: Total Gher area: 1080 hectare
March, 2017: Total Gher area: 87 hectare
Dhamalia

November, 2016: Total Gher area: 1142 hectare

March, 2017: Total Gher area: 207 hectare
Dumuria

November, 2016: Total Gher area: 704 hectare

March, 2017: Total Gher area: 10 hectare

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
Gutudia

November, 2016: Total Gher area: 3042 hectare
March, 2017: Total Gher area: 295 hectare
Kharnia

November, 2016: Total Gher area: 693 hectare
March, 2017: Total Gher area: 44 hectare
Maguraghona

November, 2016: Total Gher area: 560 hectare

March, 2017: Total Gher area: 6 hectare

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Magurkhali

November, 2016: Total Gher area: 1745 hectare
March, 2017: Total Gher area: 1864 hectare
Raghunathpur

November, 2016: Total Gher area: 1715 hectare
March, 2017: Total Gher area: 659 hectare
November, 2016: Total Gher area: 1482 hectare

March, 2017: Total Gher area: 338 hectare
November, 2016: Total Gher area: 1438 hectare
March, 2017: Total Gher area: 520 hectare
Shahosh

November, 2016: Total Gher area: 515 hectare

March, 2017: Total Gher area: 343 hectare
Sarafpur

November, 2016: Total Gher area: 104 hectare
March, 2017: Total Gher area: 270 hectare
Shobhona

November, 2016: Total Gher area: 1340 hectare
March, 2017: Total Gher area: 472 hectare
Khulna District

GIS based Gher map of Unions of Paikgachha Upazila
Map of Paikgachha Upazila with Unions

- Raduli
- Gudikhali
- Deluty
- Lata
- Haridhali
- Kapilmun
- Gadaipur
- Paikgachha Paurashava
- Chandkhali
- Sholadana
- Lachor
GIS map of Paikgachha Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>3rd March 2017</th>
<th>13th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
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<tr>
<td>Paikgachha</td>
<td>38187</td>
<td>1093</td>
<td>15997</td>
</tr>
</tbody>
</table>
Chandkhali

November, 2016: Total Gher area: 1458 hectare

March, 2017: Total Gher area: 2043 hectare
November, 2016: Total Gher area: 346 hectare

March, 2017: Total Gher area: 1361 hectare
Gadaipur

November, 2016: Total Gher area: 811 hectare
March, 2017: Total Gher area: 719 hectare
Gudikhali

November, 2016: Total Gher area: 413 hectare

March, 2017: Total Gher area: 528 hectare
November, 2016: Total Gher area: 348 hectare

March, 2017: Total Gher area: 135 hectare
Kapilmuni

November, 2016: Total Gher area: 2079 hectare

March, 2017: Total Gher area: 1775 hectare
Laskar

November, 2016: Total Gher area: 2876 hectare

March, 2017: Total Gher area: 2721 hectare
November, 2016: Total Gher area: 2881 hectare
March, 2017: Total Gher area: 2913 hectare
Paikgachha Paurashava

November, 2016: Total Gher area: 98 hectare

March, 2017: Total Gher area: 86 hectare
November, 2016: Total Gher area: 1050 hectare
March, 2017: Total Gher area: 782 hectare
Sholadana

November, 2016: Total Gher area: 3042 hectare
March, 2017: Total Gher area: 2932 hectare
Satkhira District

GIS based Gher map of Unions of Assasuni Upazila
GIS map of Assasuni Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>24th February 2017</th>
<th>17th October 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assasuni</td>
<td>37846</td>
<td>2657</td>
<td>4533</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17895</td>
<td>18244</td>
</tr>
</tbody>
</table>

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
Anulia

October, 2016: Total Gher area: 1108 hectare

February, 2017: Total Gher area: 1247 hectare
Assasuni

October, 2016: Total Gher area: 2111 hectare

February, 2017: Total Gher area: 1919 hectare
Baradal

October, 2016: Total Gher area: 181 hectare

February, 2017: Total Gher area: 328 hectare
October, 2016: Total Gher area: 1435 hectare
February, 2017: Total Gher area: 1423 hectare
Dorgahpur

October, 2016: Total Gher area: 1329 hectare

February, 2017: Total Gher area: 1096 hectare
Kadakati

October, 2016: Total Gher area: 1877 hectare

February, 2017: Total Gher area: 1640 hectare
Khajra

October, 2016: Total Gher area: 1425 hectare

February, 2017: Total Gher area: 1403 hectare
Kulla

October, 2016: Total Gher area: 1230 hectare

February, 2017: Total Gher area: 846 hectare
Pratapnagar

October, 2016: Total Gher area: 1291 hectare

February, 2017: Total Gher area: 1278 hectare
October, 2016: Total Gher area: 3277 hectare

February, 2017: Total Gher area: 3569 hectare
October, 2016: Total Gher area: 2972 hectare
February, 2017: Total Gher area: 3139 hectare
Satkhira District

GIS based Gher map of Unions of Debhata Upazila
### GIS map of Debhata Upazila with Gher and Crop area

#### Table: GIS Map of Debhata Upazila

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>16th March 2017</th>
<th>1st December 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
</tr>
<tr>
<td>Debhata</td>
<td>17548</td>
<td>2387</td>
<td>8919</td>
</tr>
</tbody>
</table>
Debhata

December, 2017: Total Gher area: 479 hectare
March, 2017: Total Gher area: 738 hectare
Kulia

December, 2017: Total Gher area: 4141 hectare
March, 2017: Total Gher area: 3658 hectare
December, 2017: Total Gher area: 3083 hectare

March, 2017: Total Gher area: 2387 hectare
December, 2017: Total Gher area: 800 hectare
March, 2017: Total Gher area: 588 hectare
Satkhira District

GIS based Gher map of Unions of Kaliganj Upazila
Map of Kaliganj Upazila with Unions

SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector
GIS map of Kaliganj Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>24th February 2017</th>
<th>17th October 2016</th>
</tr>
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<tbody>
<tr>
<td>Kaliganj</td>
<td>32735</td>
<td>2215</td>
<td>5000</td>
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<td></td>
<td></td>
<td>15747</td>
<td>15030</td>
</tr>
</tbody>
</table>
Bharasimla

October, 2016: Total Gher area: 618 hectare
February, 2017: Total Gher area: 735 hectare
Bishnupur

October, 2016: Total Gher area: 316 hectare

February, 2017: Total Gher area: 336 hectare
Champaphul

October, 2016: Total Gher area: 2205 hectare

February, 2017: Total Gher area: 2296 hectare
Dakshinsreepur

October, 2016: Total Gher area: 908 hectare

February, 2017: Total Gher area: 980 hectare
Dhalbaria

October, 2016: Total Gher area: 1122 hectare

February, 2017: Total Gher area: 1265 hectare
Krishnanagar

October, 2016: Total Gher area: 997 hectare
February, 2017: Total Gher area: 1050 hectare
Kushlia

October, 2016: Total Gher area: 921 hectare
February, 2017: Total Gher area: 904 hectare
Mathureshpur

October, 2016: Total Gher area: 1175 hectare
February, 2017: Total Gher area: 1315 hectare
October, 2016: Total Gher area: 511 hectare

February, 2017: Total Gher area: 488 hectare
October, 2016: Total Gher area: 2565 hectare

February, 2017: Total Gher area: 2489 hectare
October, 2016: Total Gher area: 915 hectare

February, 2017: Total Gher area: 1022 hectare
October, 2016: Total Gher area: 2771 hectare

February, 2017: Total Gher area: 2860 hectare
Satkhira District

GIS based Gher map of Unions of Shyamnagar Upazila
Map of Shyamnagar Upazila with Unions
### GIS map of Shyamnagar Upazila with Gher and Crop area

<table>
<thead>
<tr>
<th>Upazila Name</th>
<th>Total area (ha)</th>
<th>13th March 2017</th>
<th>13th November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agriculture (ha)</td>
<td>Gher (ha)</td>
</tr>
<tr>
<td>Shyamnagar</td>
<td>205299</td>
<td>2493</td>
<td>18803</td>
</tr>
</tbody>
</table>
November, 2016: Total Gher area: 1729 hectare

March, 2017: Total Gher area: 1648 hectare
November, 2016: Total Gher area: 455 hectare
March, 2017: Total Gher area: 594 hectare
Burigoalini

November, 2016: Total Gher area: 2485 hectare
March, 2017: Total Gher area: 2189 hectare
Gabura

November, 2016: Total Gher area: 1984 hectare

March, 2017: Total Gher area: 1817 hectare
Ishwaripur

November, 2016: Total Gher area: 1323 hectare
March, 2017: Total Gher area: 1261 hectare
Koikhali

November, 2016: Total Gher area: 1456 hectare

March, 2017: Total Gher area: 1585 hectare
Kashimari

November, 2016: Total Gher area: 1284 hectare
March, 2017: Total Gher area: 1430 hectare
Munshiganj

November, 2016: Total Gher area: 2099 hectare

March, 2017: Total Gher area: 2097 hectare
November, 2016: Total Gher area: 1249 hectare

March, 2017: Total Gher area: 1335 hectare
November, 2016: Total Gher area: 2225 hectare
March, 2017: Total Gher area: 2106 hectare
Ramjannagar

November, 2016: Total Gher area: 2225 hectare

March, 2017: Total Gher area: 1726 hectare
Shyamnagar

November, 2016: Total Gher area: 1022 hectare
March, 2017: Total Gher area: 999 hectare
## Summary table of calculations of crop and gher areas in two seasons, derived from the interpretation of satellite imagery.

<table>
<thead>
<tr>
<th>District</th>
<th>Upazila</th>
<th>GIS based data of crop and gher areas (ha)</th>
<th>November 2016</th>
<th>March 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gher</td>
<td>Crop</td>
<td>Gher</td>
</tr>
<tr>
<td>Bagerhat</td>
<td>Bagerhat Sadar</td>
<td>10,231</td>
<td>2,125</td>
<td>4,574</td>
</tr>
<tr>
<td></td>
<td>Chitalmari</td>
<td>7,927</td>
<td>872</td>
<td>2,662</td>
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<tr>
<td></td>
<td>Morrelganj</td>
<td>10,623</td>
<td>5,013</td>
<td>5,864</td>
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<tr>
<td></td>
<td>Rampal</td>
<td>12,066</td>
<td>2,092</td>
<td>8,206</td>
</tr>
<tr>
<td>Cox’s Bazar</td>
<td>Chakoria</td>
<td>12,235</td>
<td>2,562</td>
<td>6,977</td>
</tr>
<tr>
<td>Jessore</td>
<td>Abhoynagar</td>
<td>6,264</td>
<td>284</td>
<td>3,456</td>
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<tr>
<td>Khulna</td>
<td>Dumuria</td>
<td>17,359</td>
<td>5,617</td>
<td>5,824</td>
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<tr>
<td></td>
<td>Paikgachha</td>
<td>15,442</td>
<td>7,030</td>
<td>15,997</td>
</tr>
<tr>
<td>Satkhira</td>
<td>Assasuni</td>
<td>18,244</td>
<td>4,533</td>
<td>17,895</td>
</tr>
<tr>
<td></td>
<td>Kaliganj</td>
<td>15,030</td>
<td>5,000</td>
<td>15,747</td>
</tr>
<tr>
<td></td>
<td>Shyamnagar</td>
<td>18,985</td>
<td>7,471</td>
<td>18,803</td>
</tr>
<tr>
<td></td>
<td>Debhata</td>
<td>10,451</td>
<td>1,655</td>
<td>8,919</td>
</tr>
</tbody>
</table>
Disclaimer:

These Geographic Information System (GIS) maps were developed utilizing Sentinel-2 (ESA) Imagery with the assistance of the Remote Sensing and GIS Laboratory, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur, Bangladesh.

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