Supplementary Material

Optimal cropping pattern based on short-term streamflow forecasts to improve agricultural economic benefits and crop productivity under uncertainty conditions

Gaurav Talukdara\*, Rajib Kumar Bhattacharjyab, and Arup Kumar Sarmab

aPh.D. scholar, Department of Civil Engineering, Indian Institute of Technology, Guwahati, Guwahati, India

bProfessor, Department of Civil Engineering, Indian Institute of Technology, Guwahati, Guwahati, India

\*Corresponding author: Gaurav Talukdar, Indian Institute of Technology, Guwahati, Assam, India, 781039

E-mail address: gauravt@iitg.ac.in

Full postal address: Department of Civil Engineering, Indian Institute of Technology, Guwahati, Assam, India, 781039

|  |  |
| --- | --- |
| E:\Gaurav\OneDrive - Indian Institute of Technology Guwahati\survey recordings\20210704_120338.jpg  5-6 feet height  (a) | E:\Gaurav\OneDrive - Indian Institute of Technology Guwahati\survey recordings\20210704_112757.jpg  Flood water rising in sandbars  (b) |

Figure S1. Pattern of vegetable grown during the onset of monsoon period in a sandbar within the Brahmaputra River to avoid damage due to flood (a) Before flooding condition (Farm 1); (b) during nominal flooding (Farm 2). The maximum depth of water measured was 0.4-0.5m. (*Location*: 26°14’37” N, 91°46’37” E, *Date*: 4th July 2021: 12.33 pm. *Picture courtesy*: The Author)

Table S1. Flood tolerant varieties of crops

|  |  |
| --- | --- |
| **Crop** | **Flood tolerant crop varieties** |
| Rice | CR Dhan 502, CR Dhan 505, Durga, Gayatri, Sarla, Hemavathi, Jaladhi 1, Jaladhi 2, JalaMani, , Jalnidhi, Neerja, Pooja, Prateeksha, Sambha Mahsuri, Sub-1Swarna Sub-1, Varshadhan |
| Maize | HM-5, Seed Tech-2324, HM-10, HTL lines, PMH-2, B73, SUS lines,  \*Z. luxurians, and \*Z. mays ssp. huehuetenangensis \*Z. nicaraguensis |
| Barley | \*H. marinum and \*H. spontaneum |
| Wheat | \*Triticum macha L. or T. dicoccum cv., T. spelta |
| Rapeseed | \*B. juncea and \*B. carinata, \*GH01, \*Zhongshuang 9, |
| Jute | Bidhan Pat-1, JRC 321, JRC 532, JRC-517, JRC 7447, JRO 878,  JRO 7835 |
| Pulses | Pigeon pea (Asha (ICPL 87119) |

(*Source: Ministry of Agriculture and Farmers Welfare, Government of India)* <https://pib.gov.in/newsite/PrintRelease.aspx?relid=123999>

*\*other flood tolerant varieties (Verhoeven et al., 2010)*