Fig.1 Seasonal changes of flat types and dominant sedimentary facies in each flat

Vertical sequences in the Ganghwa tidal flat show slightly coarsening-upward pattern with Holocene sea-level. Compared to open-coast tidal flats which occur dominantly in the southwestern coasts of Korea, storm-influenced units are very rare in the preserved deposits. Major depositional processes are weak wave-induced and strong tide-induced current, suggesting that tide-induced processes are more important than wave-induced ones in the preserved units.

Surface sedimentation is suggestive that this flat corresponds to deltaic to estuarine environment during summer but it does to normal tidal flat during other seasons at the point of preservation. However, it seems very difficult to differentiate deltaic summer layers from other tidal mud deposits in cores. A kind of seasonal bundle may be formed in deltaic to estuarine deposit, especially in monsoonal environments. Possible seasonal bundle could be a criterion to differentiate the coarsening- upward sequential pattern from open-coast and deltaic tidal flats. This warrants for the layer-by-layer works on mud laminations deposited in the upper tidal flats, if possible.

The settlement displacement and changes of agricultural cropping pattern: an overview on *Char-Land* of Padma River basin in the Ganges Delta

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Bangladesh is the great deltaic floodplain of the world. This deltaic floodplain is formed by the deposion of the Ganges, Brahmaputra, Meghna, Januma and Tista River. The *Char-land* consists of reverine landscapes, features created by three mighty rivers Ganges Brahmaputra and Meghna (GBM) systems. The land which is newly emerged and deposit known as locally called *Char or Diara*. *Char-land* is the Bengali term for mid channel island that periodically emerges from the riverbed as the result of accretion. This new land is fertile and a valuable natural resource. The *Char-land* landscapes of Bangladesh are of great importance for its exceptional hydro-geographical setting. The physical characteristics of the land, geographic location, the multiplicity of rivers and the monsoon climate render the *Char-lands* highly vulnerable to natural disasters, such as floods and cyclones. There are over twelve million *Chaura* people are living in the *Char-lands* and struggling against monsoon floods and river bank erosion in Bangladesh. The *Char-lands* of Padma River are undergoing rapid hydro-morphological changes due to natural and anthropogenic causes. The Padma is a meandering river and has high rate of river bank erosion and accretion character in the channel. In the monsoon time (June-September) only Brahmaputra (Jamuna) transports water discharge 100,000 m$\square$/sec which is 15 times more than Danube at its mouth. The excesses of water during the monsoon cause wide spread of flooding which damage *Char-land* settlements, agricultural crops, infrastructures, communication networks and lives. The Jamuna River carries 2.4 million tons sediments in every year and loads are settling down on the bed of the rivers and having negative impacts on the floodplain and *Char-lands*. The Purba Khas Bandarkhola Mouza of Char Janajat union of Madaripur district is part of the Ganges Active Delta and located in the main channel of the Ganges-Padma River. The Char Janajat inundate by the monsoon floods in every year, as impacts people have to displaced and the settlements are scattered from one place to another places (Fig.1). The elite class of *Char-land* lives in the main land and they control all most all the social and administrative functions of their self. The agricultural crops of the *Char* depend on the soil quality or fertility. The soil quality and fertility of *Char-land* is depending on floods and accretion. It has been asserted from the study that the agricultural cropping pattern in the *Char-land* is different from the other places of the country because of uncertainty of *agricultural* land. The study finding shows that the *Chaura* people have to displace because of the interval of massive floods and the trends of river bank erosion. The dwellers are displaced from the *Char*

and again come back to the native *Char* when the new land emerges in the river channel. The mobility distance of the *Char* settlements is 12 km range in an average distance (Fig.1). The study shows the interval of displacement is every five years at Purba Khas Bandarkhola Mauza in an average (Fig.1). The settlements displacement and population increases and decreases are deepened on floods and river bank erosion at the Bandarkhola Mouza (Fig.2). The study has done based on primary and secondary data sources. GIS Arc View 9.1 used for data visualization and Remote Sensing Imageries have been used to investigate the changing pattern of agricultural crops and settlement displacement trends. The research output will be a valuable contribution to make a national plan for *Char* development and protection of indigenous agricultural cropping systems in *Char-lands*. The objective of this study is to develop a comprehensive management and development plan for *Char* settlement and agricultural crops system in the Padma-Jamuna Riverine *Chars* in the Ganges Delta in Bangladesh.
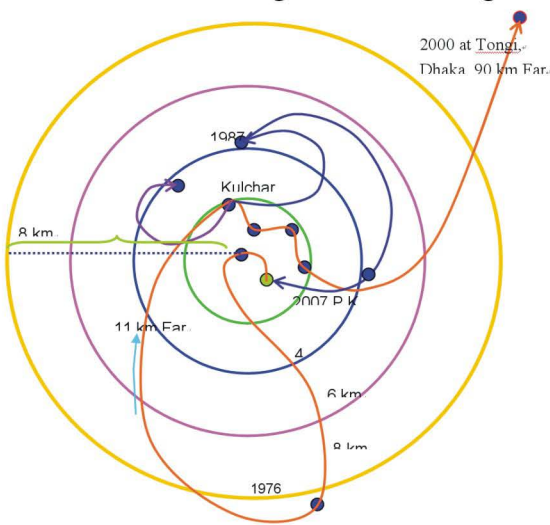

Fig.1 The Model of settlement displacement and char people mobility cycle
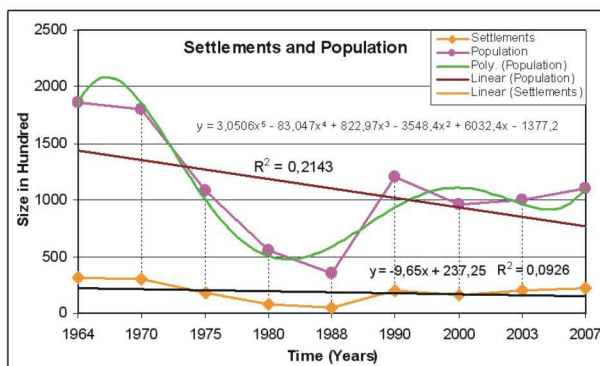

Fig.2 The Settlement and population displacement at Purba Khas Bandarkhola Mauza

Heavy metal distribution and its pollution appraisal in sediments of mud area from the Inner shelf of the East China Sea

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By analyzing the 58 surficial sediment grain size, the contents of organic materials, heavy metals of Cu, Pb, Cr, Zn etc. as well as Al_2O_3 in mud area of the East China Sea Inner Shelf, this paper discusses the spatial distribution characteristics and its influential factors of heavy metal elements in mud area of the East China Sea inner shelf. The correlation analysis results show heavy metal content is closely related to grain size, organic materials and terrigenous materials; the heavy metal content displays a strong grain size control effect and continental origin. The hydrodynamic force is another important controlling factor of heavy metal distribution, the coastal current in Fujian and Zhejiang Province as well as Taiwan warm current etc. results in heavy metal distribution isoclines being parallel with coastline. In the pollution accumulation appraisal of Cu, Pb, Cr, Zn, the sediments enrichment factor and the potential ecological hazards are applied, which shows that only the concentration coefficient of Pb in Minjiang River Estuary reaches moderate pollution degree, while other large area is commonly the zero-lightly polluted degree; the potential ecological hazards indicates a rather low bottom material pollution level in mud area of the East China Sea Inner Shelf, thus there is no ecological hazard temporarily.

Comparative analysis of palynoassemblages of sediment profiles (CH-I & CH-51) from two different regimes of Chilika Lake, Orissa, India

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Chilika lake (19° 28′ -19° 54′ N; 85° 05′ - 85° 38′ E) along the eastern seaboard of India in Orissa State is one of the largest brackish water