

HSC04-01

会場:315

時間:5月2日 16:15-16:30

## 東日本大震災における津波災害地域の地域コミュニティー活動 Local community and Tsunami-lesson from 2011 eastern Japan mega earthquake

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阿武隈川河口部以南地域における 2011 年津波災害の被災地域において地形・土地利用と被災との関係を明らかにし、土地利用現況の中での地域コミュニティーの災害軽減にかかわる活動を比較検討した。その結果、自主防災組織の活動内容が災害軽減の一つのファクターであったことがわかった。

キーワード: 津波, 地域コミュニティー, 地形  
Keywords: Tsunami, Local community, landform

**Fluvial Environmental Changes of the Ayeyarwady Delta: Case Study for Nyaungdon Borecore Area**  
**Fluvial Environmental Changes of the Ayeyarwady Delta: Case Study for Nyaungdon Borecore Area**

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The Ayeyarwady River is one of the largest rivers in Myanmar and drains an area of 85,534 km<sup>2</sup>. The study area is mainly located in the central part of deltaic of the Ayeyarwady River belonging to Nyaungdon Township, Ayeyarwady Region. The main purpose of this study is to clarify geomorphologic land classification mapping and fluvial features of the Ayeyarwady River Delta derived from aerial photos, Landsat +ETM7 Global Digital Elevation Model Version 2 with GIS and RS linkage and to check long term natural environmental restoration of the lower Ayeyarwady River at Nyaungdon drilling point in Ayeyarwady Region. The volume of sediment deposited rate and discharge rate should be accumulated rapidly before Holocene period because we could clarify with the results of <sup>14</sup>C dating of the organic materials including each layer and all core drilling samples, concept of paleo-geography and geomorphologic evolution, landform development of the study area.

キーワード: Ayeyarwady River Delta, Geomorphologic land classification map, sedimentary facies, drilling bole core, discharge, radiocarbon age  
Keywords: Ayeyarwady River Delta, Geomorphologic land classification map, sedimentary facies, drilling bole core, discharge, radiocarbon age

## The Impact of Joint Forest Management on Household Income and Forest Condition: The Case of Madhya Pradesh, India

### The Impact of Joint Forest Management on Household Income and Forest Condition: The Case of Madhya Pradesh, India

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Joint Forest Management (JFM) is a benefit-sharing scheme between rural households and the state government. Rural households are the user of forest resources for their livelihood, such as grazing, fuel woods, wild foods, etc., while the state government is the owner of the forest land and trees in the forest and makes revenue from the sales of forest resource such as timber, medicinal plants, etc. In the past, the state government used to protect the state forest from rural households, but the protection had been becoming more costly due to the increasing population and as a result forest resources had been depleted. JFM scheme was formally introduced by the central government in 1988 to provide rural households with incentive for forest management by benefit sharing, and each state government adopted JFM since then. Under JFM scheme, rural households have to regulate their use of forest resources for their livelihood and they are promised to will a significant share (e.g. 50%) of timber sales revenue.

Although JFM has been implemented for almost 20 years in most states in India, its impact on the welfare of rural households and forest condition has rarely investigated quantitatively. Thus, the objective of this paper is to tackle this remaining question. This paper utilizes a two-year panel data of 360 households and the satellite images of forest around their residential places. The panel data were collected in 1998 and 2008 in 60 villages spread over 6 districts in Madhya Pradesh.

Our analyses show that JFM neither increased nor decreased household income per capita although household income per capita increased significantly during the 10 year period investigated. It implies that the restriction of forest use did not have any negative effect on the welfare of rural households, but that the benefit sharing was not realized or did not increase household income. The latter is consistent with the fact that most timber trees are still immature to harvest. On the other hand, forest condition was improved during the 10 year period in villages where JFM was implemented. The improvement of forest resources is considered to be caused by forest protection from grazing and tree plantation as part of JFM activities. In conclusion, the state government has benefited from JFM, while rural households have not benefited from JFM although they have not decreased their welfare at least in the short-run.

Keywords: joint forest management, impact assessment, panel data, household income, forest condition, India

インドにおける中間地域の成立と土地利用・被覆変化ーマイソール市の事例からー  
Forming the Inter-mediate Region between Urban and Rural in India - a case of Mysore  
city, Karnataka -

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The fragmentation of agricultural land due to inheritance and partial selling has put the farming community into marginal farmers. A marginal farmer owning less than one acre of land, losses complete livelihood from his land. He becomes a partial non agriculture worker along with his farming occupation. Ultimately, leading to permanent change in occupation. In the later period he disowns the farming activity and migrates to the fringe of the nearby city. The CBD pressure on fringe begins as ripples from the city towards fringe. Consequence of this the fringe pressure ripples towards the farming and forest land. This has vice versa effect from Rural to Urban Fringe. The rural pressure which emanates from outer country land towards city mounts up its pressure on Fringe.

This paper discusses about the process of expanding cities, its pressure on fringe, the rural farming land, shifting occupation and bouncing effect towards city. A fast growing city like Mysore city bounded by farming land of Mysore and Chamaraja districts is a good example to explain the situation of many cities of India which are experiencing similar process and bouncing effect.

キーワード: 中間地域, 土地利用・被覆変化, 人口圧, 都市・農村, インド

Keywords: Inter-mediate Region, Land Use and Cover Changes, Population Pressure, Urban - Rural, India

中国における市街地面積の経年的傾向—統計データによる予察的考察  
Time-serial trend of built-up area of China - A preliminary consideration of statistical data

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The research group of SLUAS (Research project of "Towards Sustainable Land Use in Asia" Grant-in-Aid for Scientific Research(S) 2009-2013, Yukio Himiyama) has executed several research field trips in various regions of China. The author fortunately has chance to join the field trips and to observe several land-use conditions and land-use changes on the way. As a result of those research field trips, the author confirmed that the built-up area remarkably expanded by fast growing economy of big cities in the coastal area such as Beijing and in those cities not only the industrial development but also the housing development and shopping malls are developed actively in the suburban area. On the other hand, the author also felt that the cities in the inland area, however, it is late comparatively its economic growth from the coastal region, a built-up area growth is generated recently by the industrial and housing developments in the high rise apartment building etc. The present study intends to confirm such a personal impression about recent built-up area growth of China by using statistical material.

The objectives of the research are as follows. First object is to confirm time serial feature of the built-up area expansion. Second is to analyse the relation between the built-up area expansion and population scale. Third is to confirm regional difference of built-up area expansion by using regional division in China. And forth is to consider factors or the background of the built-up area expansion. So the author analyses the relations among built-up area expansion, a population increase, and GDP indexes. Findings concerning obtaining by these objectives are beneficial to estimate how a spatial expansion of the China city will become in the future.

The author set up hypothesis obtaining by the research are as follows. One is that built-up area expands according to a population increase and economic growth of a city. Second is that structural change of an economic condition of a city such as secondary industry and tertiary industry is reflecting its expansion of built-up area of a city. Third is that the growth wave of a city spreads from the coastal region to the inland area.

キーワード: 市街地, 人口, 地域区分, 産業構造

Keywords: built-up area, population, regional division, economic structure

## 新疆における食糧生産の人間活動. 自然環境との関係に関する研究 Study on the relationship between human activities. natural environment of food production in Xinjiang

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Maintaining the food production force is a basic condition for ensuring the food security in Xinjiang Uygur Autonomous Region. In this study, We have carried out the factors analysis from both sides of the natural and social factors on food production in Xinjiang, using the unit area production volume as the main indicator of food production. In order to understand the temporal change of the unit area production volume in Xinjiang at first, We extracted the unit area production volume data from the Statistical yearbook in Xinjiang, and analyzed the secular change of food production in Xinjiang. The result shows that the unit area production volume had been growing steadily over the 1990-2003, but shows an unstable state since 2004, and has been reduced in 2008; In order to understand the spatial variation of the unit area production volume, We have created a difference image using GIS technique, between 2008 when the unit area production volume reduced, and 2003 when the unit area production volume had been continued growth to analysis the regional changes of food production. It shows that the regions which the unit area production volume decreased are distributed more in the area of the north and east of Xinjiang in 2008 comparison to 2003.

In order to understand the change factor of food production, the analysis has been done on the causes of changes in food production in Xinjiang, by extracting the data of the chemical fertilizer that was used for the food production, irrigation area, agricultural machinery and the rural electricity from the statistical yearbook, The result shows that the effective irrigation rate in Xinjiang after 2005 was reduced by the loss of irrigation facilities and equipments, and it is confirmed that these area are substantially matches to the region in which the unit area production volume decreasing. The data of the agricultural production material price, commodity retail price, agricultural products purchase price are also used for the same analysis, It was estimated that the rise of agricultural production material prices, has become a factor in reduction of food production indirectly through reduced production cost in 2008 that unit area production volume was reduced.

On its outer, using the TRMM343 precipitation data and CRU TS3.21 temperature data, analyzed the natural factors of food production change. It shows that the trend of precipitation in decline, and the reduction position matches well with the area of unit area production volume are decreased. However, it is suspected that both of human activities and natural factors have been the impact jointly to the changes in food production in Xinjiang.

キーワード: 新疆ウイグル自治区, 食糧生産量, 人間活動, 自然環境, 地理情報システム

Keywords: Xinjiang Uygur Autonomous Region, Food production, Human activities, Natural environmen, GIS

HSC04-07

会場:315

時間:5月2日 17:45-18:00

## Framing Land Use Sustainability Research in Future Earth Context Framing Land Use Sustainability Research in Future Earth Context

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The Future Earth Initial Design issued late in 2013 emphasizes the importance of land use research related with sustainability. What are written about land use are not particularly new to land-use specialists, but what is significant is that land use is considered as a priority concern of Future Earth. The paper discusses how to frame land use sustainability research in Future Earth Context based on the achievements and experiences of IGU-LUCC (International Geographical Union Commission on Land Use/Cover Change), GLP (Global Land Project), SLUAS (Towards Sustainable Land Use in Asia Project) and others.

キーワード: Future Earth, land use, GLP, IHDP, IGU-LUCC  
Keywords: Future Earth, land use, GLP, IHDP, IGU-LUCC

## 地球研アーカイブスによる地球環境学際研究の成果利用 RIHN Archives - for transdisciplinary research on global environmental studies

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総合地球環境学研究所では、地球環境問題の根源としての人と自然の相互作用のあり方を解明することを研究所のミッションとして、多様な分野の研究者が所内外から集まり、相互に連携して研究に取り組んでいる。

研究所のプロジェクト研究は、研究期間を3ないし5年に限り、すべて任期付きの研究者によって進められており、今後の大型研究のあり方に一石を投じている。一方で任期付きの研究者が期間を限った研究プロジェクトを実施するため、いかに地球研らしい研究成果を地球研に積み上げていくか、ということが喫緊の課題となっている。

当研究所では、2007年度から地球研アーカイブスによって研究成果の蓄積と管理、研究資源の有効活用に取り組んでいる。2013年3月からは地球研アーカイブス・データベースを公開している。

データベースには出版物の書誌情報、成果報告書、外部評価、広報資料、フィールドで取得した資料の情報、観測データや地図データのほか、プロジェクト研究の履歴、行事のプログラム、一般向け講演の配布資料や録画などが収録されている。収録物は気候・気象、地理、水文水資源といった地球惑星科学にかかわる研究成果、文化人類学、生態学、公衆衛生、農学、言語学などさまざまな分野にまたがる統合的な研究成果が収められている。

したがって、地球研アーカイブスそのものが地球研で行われてきた統合的な地球環境研究の記録であるともいえる。また、地球研では毎年所内外から研究課題を公募しており、同時にこれまで進めてきた研究プロジェクトの成果を統合的に俯瞰し総合地球環境学を構築し、地球環境のあるべき姿を具現化するための研究が進められている。

地球研の多くの研究プロジェクトは、Future Earthの研究ミッションに資する研究の目的を掲げ、異分野研究者と研究対象地域の多様なステークホルダーを巻き込んだ研究体制によって実施されている。地球研自身もFuture Earth in Asiaにおいて中心的な役割を果たすことが期待されており、地球研アーカイブスは、学際的な新たな研究テーマを探すための資料庫としても有用である。

キーワード: 地球環境研究, 学際研究, 成果公開

Keywords: global environmental studies, interdisciplinary research, outreach