

# **Land as a Resource: A Historical View**

**(8000 B.C to 2010 A.D.)**

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# Introduction and history of land

- Land is a finite resource comprises of soils, minerals, water and biota
- Land evolution and origin was takes place during mid-Paleozoic era, between about 480 and 360 million years ago,
- It was an important event to far-reaching consequences for the evolution of terrestrial organisms and global environments (Kenrick,et al. 1997)
- During the last ice age of about 8,000 BC the people, animals and plants are invaded on the land at the same time ice had disappeared
- By about 1 AD the countryside in many parts of the Western Europe was well planned with field systems in rotation, pasture and coppiced woodland

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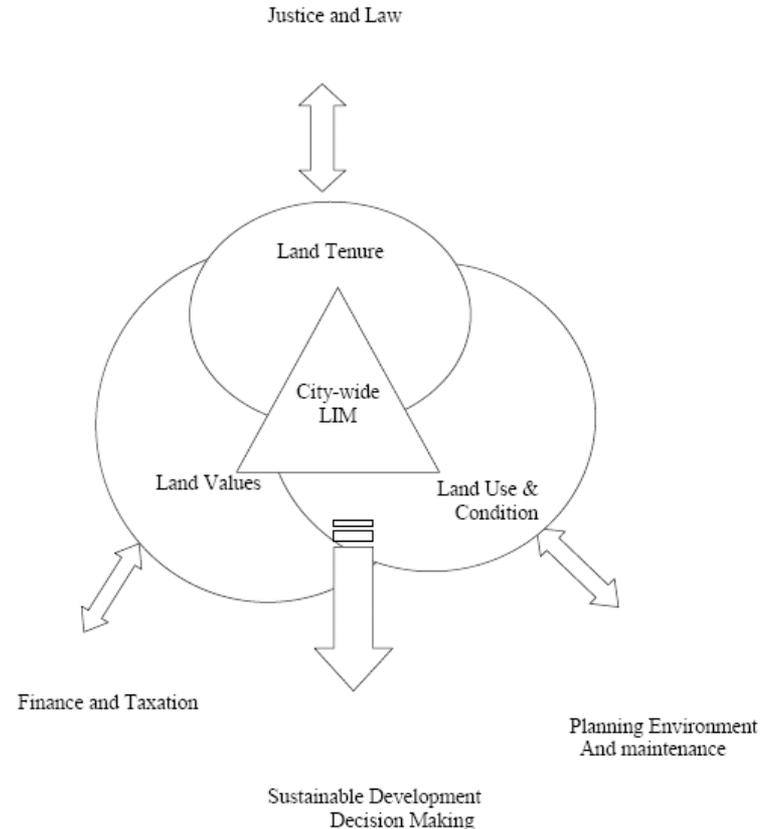
- During the early 1 AD, hill forts became common and acted as local centers of administration, power and refuge
- The histories of the land are not only embodied with architectures of the human being, but also include natural elements and natural objects, especially water, rocks, and trees, which form features such as rivers, lakes, mountains and forests (Baindur, 2009)
- And natural sacred places are associated with *Stala Puranas*
- Agenda 21 recognizes the need to allocate land for sustainable uses and promote the integrated planning and management of land resources

# Evolution Concepts of Land and Property

- Territoriality is the primary expression of social power which helps to understand the historical relationship between society and space
- According to history, the strongest drives for territoriality is commercial growth
- Ascendance of this capital has tended to reduce land to simply another trading commodity
- The Normans extended and developed the feudal system after the Conquest of England in 1066
- Under the feudal system, all land was owned directly or indirectly by the king
- King was granted use of these lands to his subjects in return for the rendering of military or other services
- The tenant and his heirs were bound in feudal service even if they had subinfeudated to another party

# Land Information System

- The advent of Agriculture introduces reclamation of the jungle into the arable land
- According to *Crain*, Information system is a large central bank of data, which facilitates for manipulating, retrieving, updating, and reporting of data
- Another commonality amongst information systems are whether it is a personnel, financial or management system
- A history of India be the story of predominate dynasties, Exa. Elphinstone acted upon this principle in his classic work, and practically confined his narrative to the transactions of the Sultans of Delhi and their Moghal successors.



Source: (Enemark, 2003)

# Deeds/Title Registration System

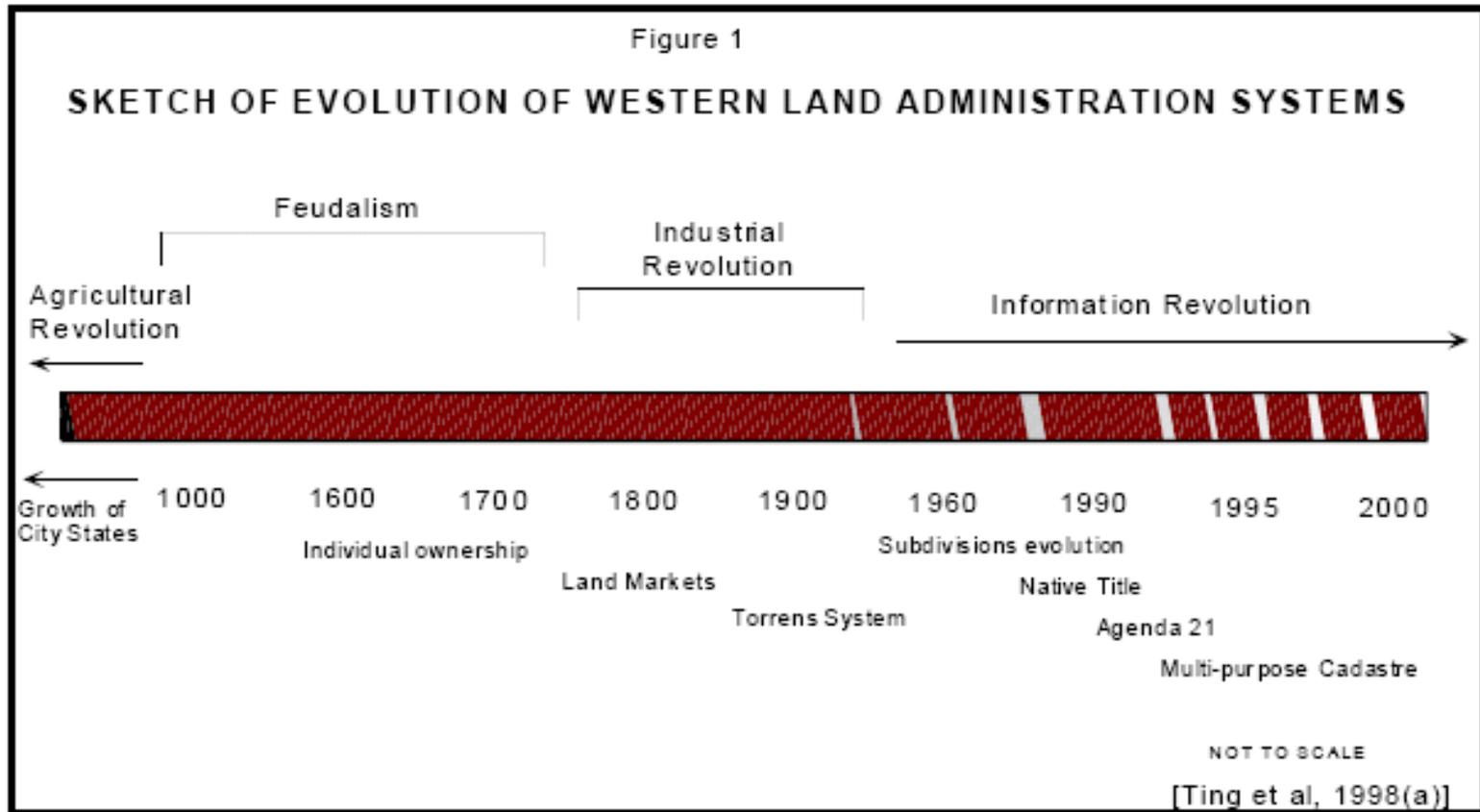
<b>System</b>	<b>Deeds System</b>	<b>Title System</b>
Content	Who owns what	What is owned by whom
Register	A register of owners	A register of properties
Legal effect	Registration of the transaction the title is not guaranteed	Registration of the title Guaranteed by state.
Actors	Notaries/Registrars	Lawyers/Surveyors
Role of the Cadastre	Taxation Purposes	Identification purposes
Boundaries	Sketch for the deed	German and Torrens: Fixed English: General

Source: (Enemark, 2003)

# Land Administration

Variables	Feudalism - 1800	Industrial revolution 1800-1950	Post-war reconstruction 1950-1980	Information revolution 1980-
Human kind to land evolution	Land as Wealth	Land as a commodity	Land as a scarce resource	Land as a community scarce resource
Evolution of cadastral applications	Fiscal cadastre. Land valuation and taxation paradigm	Legal cadastre. Land market paradigm.	Managerial Cadastre. Land management paradigm.	Multi-Purpose cadastre. Sustainable development paradigm.

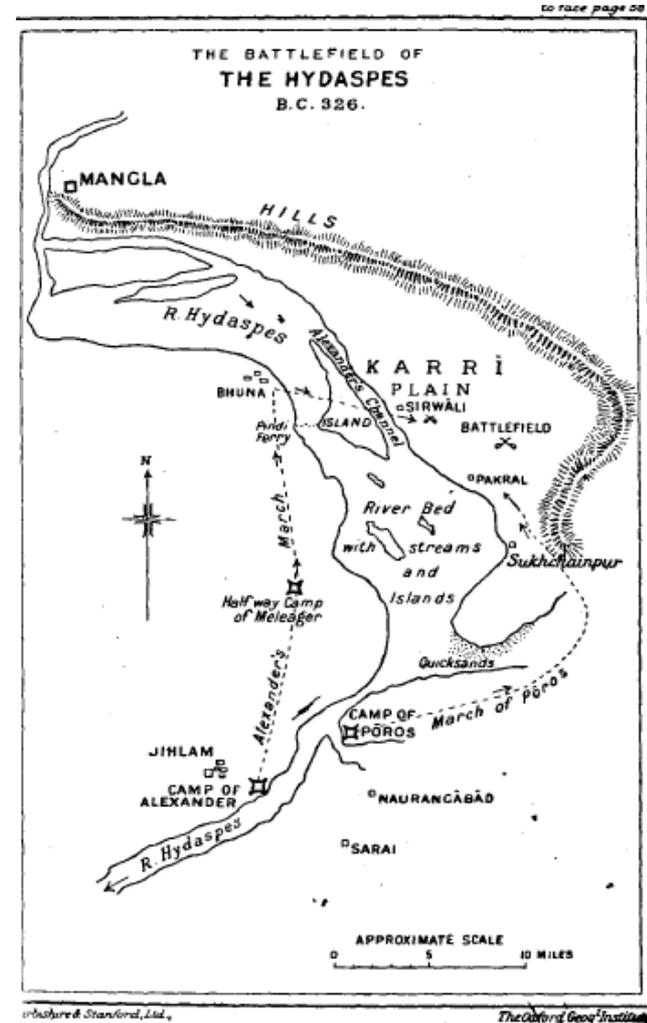
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Source: (Ting, [http://www.csdila.unimelb.edu.au/publication/journals/EvolnLandAdmin\\_SurvReview\\_.pdf](http://www.csdila.unimelb.edu.au/publication/journals/EvolnLandAdmin_SurvReview_.pdf) accessed:22.12.2011)

# Indian Land During Kings Period 326 B.C.

- The ancient kingdoms of the south, although rich and populous, inhabited by Dravidian nations not inferior in culture to their Aryan rivals in the north, were ordinarily so secluded from the rest of the civilized world
- Affairs remained hidden from the eyes of other nations and native annalists being lacking up to the year of 1000 Christian era
- Chinese Buddhist pilgrims who continued visiting their holy land for several centuries in India, begins with Fa-hsien on 399 A. D



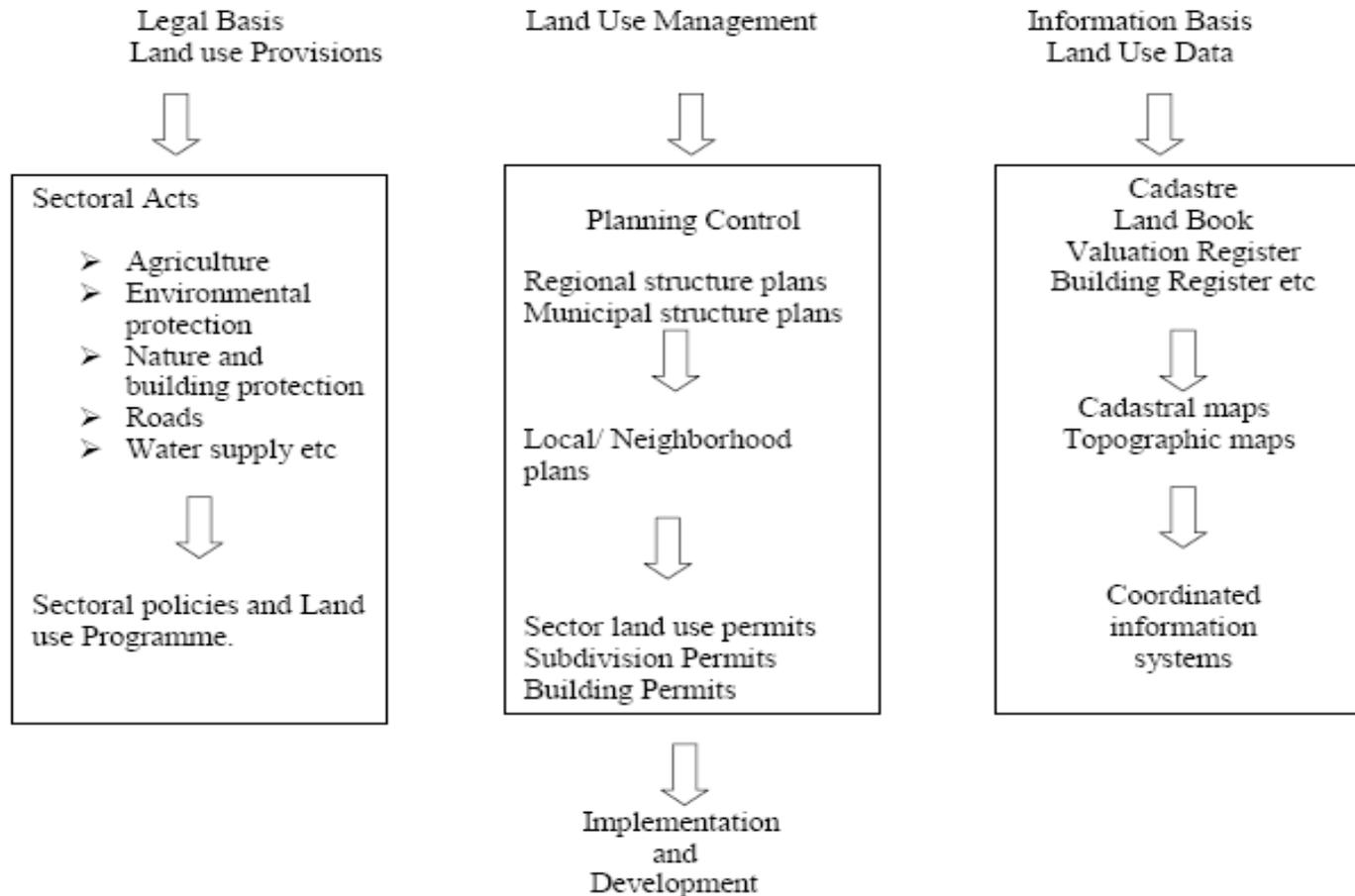
Source: (Smith, 1904)

# Land Management

- The relationship between humankind and land will always be dynamic and changes at different rates across countries and regions
- As a result of varying economic, social and environmental pressures
- The direction which that dynamism takes is dependent on the society's priorities
- The current western trend was towards tempering economic imperatives
- And planning decisions with community was lead to a new direction for land administration (Ting, et al).
- The story of the native dynasties in the interior must now interrupted to admit a brief review of the fortunes of the various foreign rulers
- Like the Indian territories once conquered by Alexander, after the sun Maurya and his empire had set
- After the communications revolution consolidation of informal property law Land administration systems and land registration in particular are changed

# Land Information flows

## The Land Management Concept



Source: (Enemark, 2003)

# Agricultural Revolution

- During Middle Ages (5-15<sup>th</sup> Century), farmers are slowly and steadily started to experiment with new agricultural methods
- Primarily, adapt to increasingly unpredictable climates and also stimulated by the growth of profitable markets in growing cities and long distance trade
- Initially low technology agricultural revolution started
- Dutch farmers experimented with ley farming, the deliberate growing of animal fodder and cultivating grasslands for cattle
- In addition they started systematic breeding of cows and the Friesian milk cow is probably the most famous example of this
- Another innovation was the continuous growing of specialized crops instead of valuable ground ley fallow, planted peas, beans and especially nitrogen-rich cover, all of which provided food for humans and as well as animals
- Later agricultural activity becomes an extensive

# Occupations during the Ancient India

- In the *Rig-Veda* we found that agriculture became the main occupation of the people, though they still kept large herds of cattle
- The fertility of the Indian soil during the ancient period was moist and stimulus to cultivation
- Wheat and barley were the chief grains
- There are frequent allusions in the hymns to the killing of cattle and to the cooking of their flesh for human consumption
- In one of the hymns they associated in preparing the juice called Soma (it was a kind of liquor)
- Constant wars with the aborigines and with each other naturally turned their attention to the improvement of weapons and the construction of shields and protective armour
- Thus led to acquiring considerable skill in metal work; and putting it into making of metal ornaments, golden crowns, necklaces, bracelets, and anklets (De La Fosse, 1918).

# Land Reclamation

- Studies show that, between 1600 and 1800 large areas of the Netherlands, England and some other countries around the North Sea were reclaimed
- Notable example: the draining of lakes in Holland and the reclamations in East Anglia
- Extensive land reclamation and the use of new mechanical technology, as well as the intensive exploitation of natural resources (peat) turned liabilities into assets
- Later between 1700 to 1800 agriculture and reclamation technologies as well as other mechanical techniques were introduced in Britain
- And taken a step further in terms of scale and later the improvement of agriculture more scientific
- In addition, British society developed new agricultural revolution through capability, efficiency, stability, and durability
- Importance for agriculture in India is given during the Maurya period

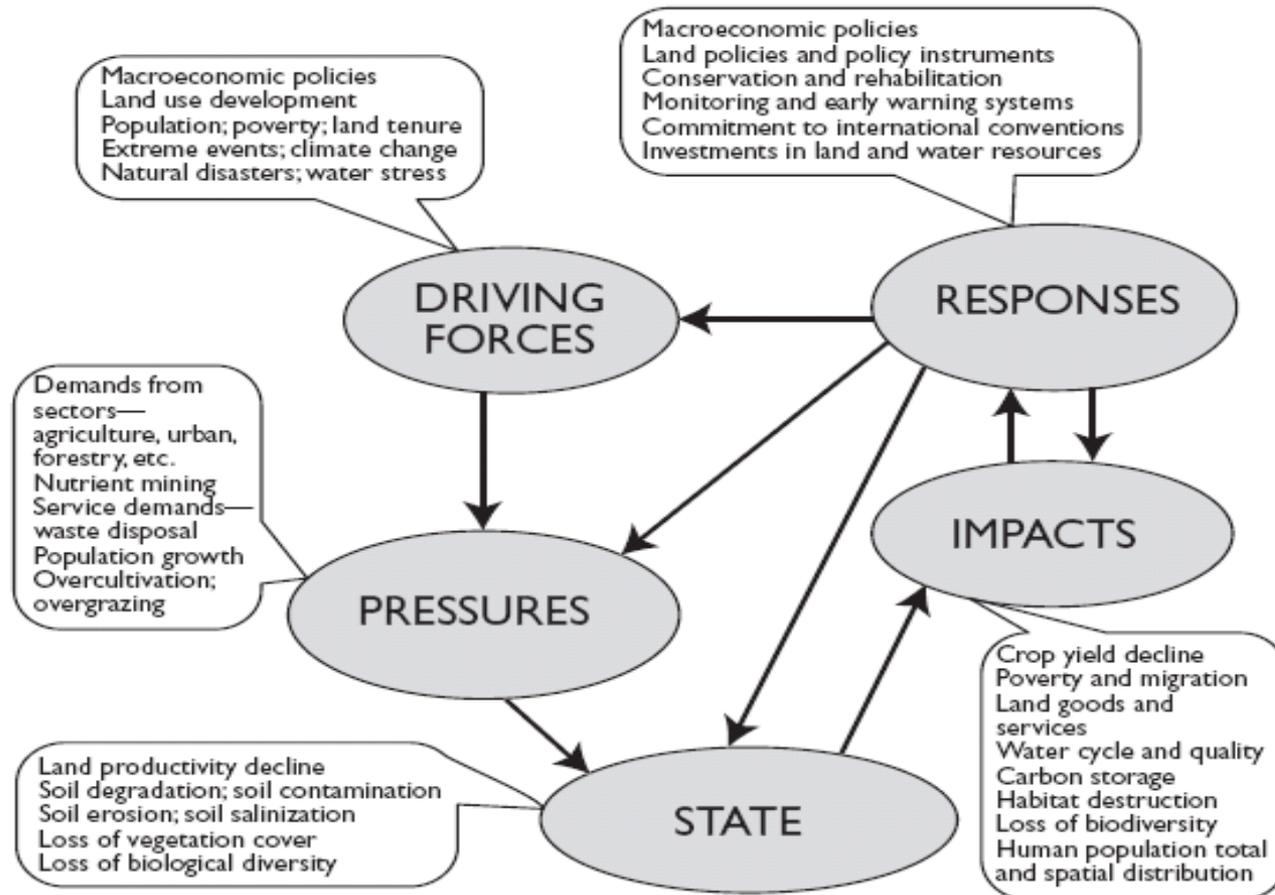
# Color Coding for Land Uses

- Land-use maps were the most common way of presenting land-based data
- Early days they were categorized land use by different colors (Jeer, 1997)
- The following are the traditional coloring schemes
  - Yellow for residential uses such as single-family and town houses
  - Browns for multi-family and high-rise residential
  - Reds for retail and commercial uses
  - Purples for industrial uses
  - Blues for institutional and public facilities
  - Greens for recreational uses
  - Grays for industrial utilities

# Land Degradation - India

- Land degradation can be defined as the loss of land productivity through one or more processes, such as reduced soil biological diversity and activity, the loss of soil structure, soil removal due to wind and water erosion, acidification, salinization, water logging, soil nutrient mining, and pollution
- Ministry of Agriculture (2000a) estimated that about 174 million hectares of land (53%) suffers from different types and varying degrees of degradation
- About 800 hectare of arable land is lost annually due to ingress of ravines
- And also estimated that more than 5000 million tonnes of topsoil are eroded every year (MoA, 2000a)
- All this has a direct bearing on food production and the livelihood of the people

# DPSIR Framework Used to Assess Land Degradation



Source: OECD 1993.

Driving Forces, Pressures, State, Impacts, Responses (DPSIR)  
 Source: (The World Bank, 2006)

# Regional Issues/Conflicts in the Land Management

- The word 'conflict' carries negative connotations (Warner, 2000)
- It is often thought of as the opposite of co-operation and peace, and is most commonly associated with violence, the threat of violence or disruptive (nonviolent) disputes
- There were different types of conflicts, each can be categorized in terms of whether they occur at the micro–micro or micro–macro levels, i.e. among community groups or between community groups and outside government, private or civil society organizations

# Intra micro–micro conflicts

- Disputes over land and resource ownership, e.g. between private and communal land owners
- Disputes over land boundaries between individuals or groups
- Latent family and relationship disputes
- Resources of a higher quality
- Breaking of CPR constitutional or operational rules, such as protection agreements for grazing areas
- Fish net sizes, forests, or misappropriation of funds, etc
- Disputes over the unfair distribution of work and profits

# Inter micro–micro conflicts

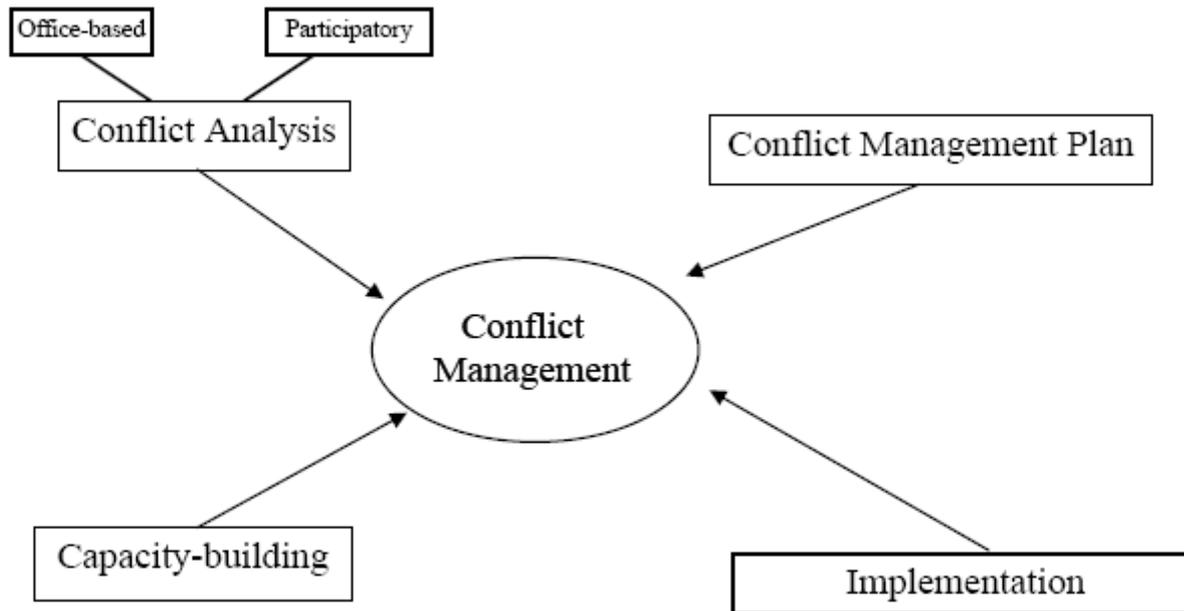
- Conflict between land-owners and resource users
- Conflict between indigenous CPR groups, and more recent settlers
- Disputes generated by jealousy related to growing wealth disparities
- Lack of co-operation between different community groups
- Disputes over renewal arrangements for leased land
- Internal land ownership disputes ignited by the speculation activities of commercial companies
- Resentment built up due to lack of representation on village committees

# Micro–macro conflicts

- Wildlife habitat protection and local livelihood security
- Cultural conflicts between community groups and outsiders
- Disputes caused by political influence (national, provincial or local)
- Between community groups and NGOs or commercial companies
- Off-site environmental impacts (unintended third-parties)

# Conflicts Management

Figure 2 Building blocks in a process of conflict management



Source: Adapted from UKFSP/ODI, 1998.

Source: (Warner, 2000)

# Govt. Initiation on Land Conservation/Management

- The Constitution of India enables the Central Govt. and the states to enact laws for the preservation and conservation of natural resources
- Article 39(b) and (c) of the Directive Principles of State Policy lays down as the duty of the state and the Centre to develop natural resources for common good
- The Eleventh schedule (Article 243-G) of the constitution lists matters pertaining to land improvement, land reforms, land consolidation, soil conservation, and watershed development and management under powers, authority and responsibilities of Panchayats (rural local bodies)
- The Twelfth schedule (243-W) lists urban planning and regulation of land-use under the powers, authority and responsibilities of municipalities (urban local bodies)
- The 73rd and 74th, Amendment Acts (1992) of the constitution brought the land use, conservation, management and related issues under the purview of local bodies in both rural and urban areas.

# Institutional Framework for Land Management

Year	Initiatives	Features
<b>Developments Pre 1992</b>		
Developments Pre 1992	National Land Reforms Policy	<ul style="list-style-type: none"> <li>* Abolition of intermediary tenures</li> <li>• Tenancy reforms</li> <li>• Ceiling on agricultural holdings and redistribution of surplus land</li> <li>• Updating and maintenance of land records</li> <li>• Consolidation of land holdings</li> <li>• Distribution of government wasteland</li> </ul>
1972-73	Drought-prone Areas Programme (DPAP)	<ul style="list-style-type: none"> <li>* Minimize adverse effects of droughts on the productivity of land, water and human resources</li> <li>• Promote overall economic development and improve the socio-economic condition of poor and disadvantaged sections inhabiting the programme areas</li> <li>• Capacity building and empowerment of village community, ensuring participation of Panchayati Raj Institutions and NGOs in programme implementation at grassroots level and transfer of funds as well as decision-making power to the local people</li> <li>• Since 1995-96, a watershed development based approach has been adopted</li> </ul>
1977-78	Desert Development Programme (DDP)	<ul style="list-style-type: none"> <li>* Mitigate adverse effects of desertification and adverse climatic conditions on crops, human and livestock population</li> <li>• Restoration of ecological balance by harnessing, conserving and developing natural resources, i.e. land, water, vegetative cover, and raise land productivity</li> <li>• Capacity building and empowerment of village community, ensuring participation of Panchayati Raj Institutions and NGOs</li> </ul>

# Cont...

Year	Initiatives	Features
<b>Developments Pre 1992</b>		
1980–81	Integrated Watershed Management in the Catchments of Flood-prone Rivers	<ul style="list-style-type: none"> <li>* Enhance the productivity of degraded lands</li> <li>•Moderation of menace of floods</li> </ul>
1985	National Land Use and Wastelands Development Council	<ul style="list-style-type: none"> <li>* Highest policy planning and coordinating agency for all issues concerning the health and scientific management of the country's land resources</li> <li>•Development of wasteland</li> </ul>
1985	National Land Use and Conservation Board	<ul style="list-style-type: none"> <li>*Formulate a national policy and perspective plan for conservation, management and development of land resources of the country</li> <li>•Review of the progress of implementation of ongoing schemes and programmes connected with conservation and development of land resources and soils</li> <li>•Take measures to restrict the conversion of good agricultural land to non-agricultural uses</li> <li>•Co-ordinate the work of State Land Use Boards</li> </ul>
1985	National Wastelands Development Board (NWDB)	<ul style="list-style-type: none"> <li>* Formulate perspective plan and programmes for the management and development of wastelands in the country</li> <li>•Identify the wastelands in the country</li> <li>•Review the progress of implementation of programmes and schemes for the development of wasteland</li> <li>•Create a reliable data base and documentation centre on related aspects of wasteland development</li> </ul>

# Cont...

Year	Initiatives	Features
<b>Developments Pre 1992</b>		
1988	National Land Use Policy	<ul style="list-style-type: none"><li>•To install an efficient and effective administrative structure for prescribing and regulating land by all concerned and revitalize the land-use boards in this respect</li><li>•Prevent further deterioration of land resources</li><li>•Restore the productivity of degraded lands</li><li>•Allocate land for different uses based upon land capability, land productivity, and national production goals</li><li>•Complete the inventory of land resources based on the prescribed land-use</li></ul>
1989-90	Integrated Wastelands Development Project (IWDP)	<ul style="list-style-type: none"><li>•Adopt soil and moisture conservation measures such as terracing, bunding, trenching, vegetative barriers, etc</li><li>•Encourage natural regeneration</li><li>•Enhance people's participation in wasteland development programmes at all stages resulting in equitable sharing of benefits</li><li>•Employment generation, poverty alleviation, community empowerment and development of human and other economic resources of the village.</li><li>•Training, extension and creation of awareness among the participants</li></ul>
1992	Policy Statement of Abatement of Pollution	<ul style="list-style-type: none"><li>•Policy Statement of Abatement of Pollution</li></ul>

# Cont..

Year	Initiatives	Features
<b>Developments post-1992</b>		
1992	Constitution (Seventy Third Amendment) Act, 1992	<ul style="list-style-type: none"> <li>• Gives land related subject to the Panchayat Raj Institutions (local self governments) at the village, block and district levels to ensure participatory planning, decision making, and monitoring of programmes by the local self governments</li> </ul>
1992	Constitution (Seventy Fourth Amendment ) Act, 1992	<ul style="list-style-type: none"> <li>• Regulation of land use and urban planning were brought under the functional domain of urban self-governing bodies</li> </ul>
1992	Department of Wastelands Development in the Ministry of Rural Development	<ul style="list-style-type: none"> <li>• Promote development of non-forest wasteland</li> <li>• Watershed approach in area development programmes</li> </ul>
1994-95	Investment Promotional Scheme (IPS)	<ul style="list-style-type: none"> <li>• Facilitate/attract/mobilize resources from financial institutions, banks, corporate bodies and individuals for development of wasteland in non-forest areas.</li> </ul>
1995	Watershed approach in area development programmes	<ul style="list-style-type: none"> <li>• Integrated ridge to valley development approach</li> <li>• Community participation</li> </ul>
1999	Department of Land Resources	<ul style="list-style-type: none"> <li>• • Coordination of land administration in India</li> <li>• Formulation of integrated land resources management policies</li> <li>• Implementation of land based development programmes</li> </ul>

# Strategies for Sustainable Land Management

- Consider Tenth Five-Year Plan which assigns high priorities to area specific programmes such as watersheds, river valleys, arid areas, wastelands
- Focus on public policies towards land use and the influence of subsequent land uses on natural resources
- Coordinate the activities of all line departments and adopt an integrated approach
- Expansion and intensification of irrigated agriculture needed
- Address the weaknesses in land use policies as well as options that are available to better address natural resource management and conservation issues in the interface
- Establish the horizontal linkages between various agencies that are involved in land resource management
- Involve the stakeholders from the planning stage onwards to address other socio-economic and poverty issues in land development programmes

# Cont...

- The government would take the lead role in capacity building at the grassroots level by planning, implementing and monitoring of land resources
- Intensification of high-quality rain-fed lands is required
- Increase women's access to productive land by regularizing leasing and sharecropping of uncultivated agricultural land
- Encourage women's groups for collective efforts in bringing wastelands under cultivation and providing policy incentives to women in low-input subsistence agriculture
- Expansion of farming into sparsely populated marginal lands
- The rise of urban and periurban farming with accelerated urbanization
- Natural resource managers and local planning officials need to understand the role of protecting natural resources in the interface
- In particular, natural resource managers need to better understand and influence public policies related to natural resources etc.

# Future Considerations for Land Resources Conservation

- Efforts of different Ministries/Departments/Organizations should be integrated to harmonize the delineation, codification and land capability
- Detailed soil data (physical, biological, chemical and microbial) based on effective soil testing are pre-requisites for all lands under both rainfed and irrigated agriculture
- Necessary financial and human resources should be assigned for the purpose
- Central and State Land Use Boards should be reorganized and empowered
- Further, we must implement the unimplemented agenda of land reform with particular reference to tenancy laws, land leasing, distribution of ceiling surplus land and wasteland, providing adequate access to common property and wasteland resources
- Conferment of land rights to women under the Hindu Succession Amendment Act (2005) should be given
- The provision of appropriate support services for women farmers should be made available
- Moreover, as far as possible, agricultural land should not be diverted to non-agricultural use

Thank you