

# *SUSTAINABLE DEVELOPMENT: A NEW PERSPECTIVE FOR HOUSING DEVELOPMENT*

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# Aims

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- ◆ To discuss the application of sustainable development concepts to form a new perspective for formulating housing strategies and monitoring housing performance.



# Structure of presentation

- ◆ Why apply sustainable development concepts to housing
- ◆ The sustainable development framework for housing
  - ✂ Environmental sustainability
  - ✂ Economical sustainability
  - ✂ Social sustainability
  - ✂ Cultural sustainability
- ◆ Housing strategies/ policies and the role of government in the new framework
- ◆ Conclusions



# Why apply sustainable development concepts to housing

## ◆ What is sustainable development?

✍ “...sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

✍ sustainability refers to the ability of the natural environment, or the ecosystem, to accommodate human activities, especially those constituting economic development, in the long term.



# Sustainable development and housing

- ◆ 2 major reasons for applying sustainable development concept to housing
  1. The integrated view and multi-faceted nature of sustainable development and housing
    - Housing is an essential component of the built environment, a constituent of social development, an important economic sector and an entity that uses natural resources (including labour power) and produces energy and waste.



# Sustainable development and housing

2. The essential role of housing plays in enhancing global and local sustainability.
  - While sustainability is a global issue, its achievement requires and in fact hinges on local actions, especially in the cities.
  - Housing is an essential component of the built environment.



# A sustainable development framework for housing

- ◆ Tenets of Sustainable Housing Development
  - ✍ The primary concern of housing development is to meet the accommodation needs of the human race.
  - ✍ Conservation of the environmental is nonetheless necessary for safeguarding the environment from deteriorating to an extent that it cannot meet the housing needs of future generation.



# A sustainable development framework for housing

- ◆ Not only meeting basic needs, “development” also implies that there will be improvements in livability.

 Shelter

 Infrastructure support

 Safety

 Pollution-free

 Neighborliness



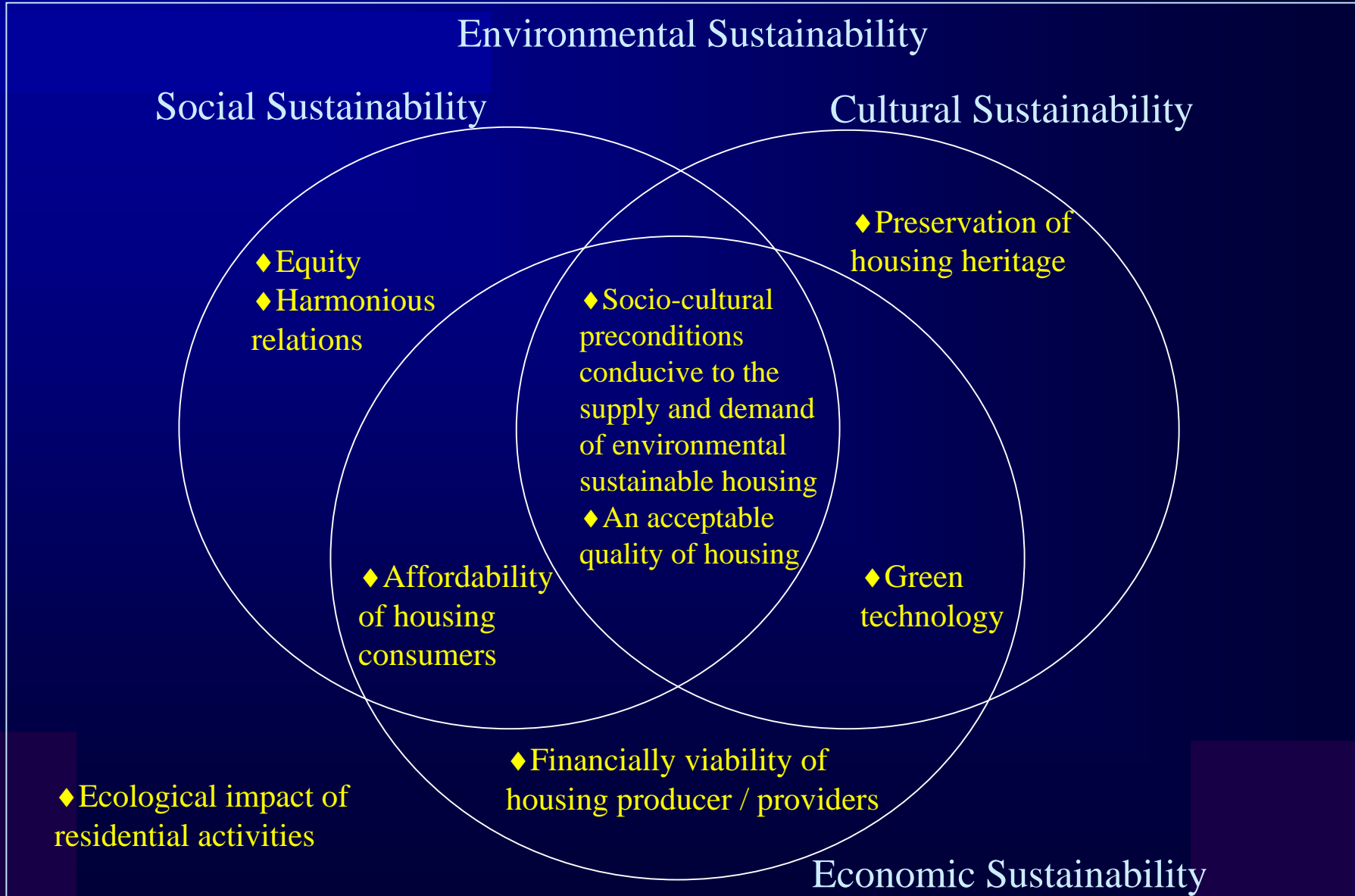
# Sustainability of housing

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- ◆ Environmental Sustainability
- ◆ Economic Sustainability
- ◆ Social Sustainability
- ◆ Cultural Sustainability



# Sustainability of housing



# Environmental sustainability of housing

- ◆ The toll of residential activities on the ecological system.
- ◆ The environmental quality of the housing conditions of the residents, who are constituent members of the ecological system.



# Environmental sustainability of housing

- ◆ e.g. at the project conception and planning stage
  - ✍ the environmental impact of the choice of the site
  - ✍ the development intensity on the local ecological system
  - ✍ the opportunity to optimise existing infrastructure



# Environmental sustainability of housing

- ✍ whether the design minimises future alteration
- ✍ whether the project enables energy saving, minimum resource utilization, efficient waste management, the use of environmentally-friendly building materials and construction systems
- ✍ whether the project encourages simple lifestyles



# The indicators

- ◆ the rate of depletion of land resources
- ◆ ecological impacts including that on climate, the use of renewable and non-renewable resources, energy efficiency, etc.
- ◆ percentage of projects certified by environmental assessment systems and their ratings



# Economic sustainability of housing

- ◆ Refers to a sustained housing production process that can satisfy present and future housing consumption, given the economic and environmental implications.
- ◆ The sustainability of such housing production and consumption processes is constrained by:
  - ✍ whether the benefits to the housing producers/providers exceeds or equal to the costs to the producers given the housing demand level; and



# Economic sustainability of housing

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- ✍ whether the housing production and consumption processes are within the environmental capacity to provide and absorbed, given the mitigation technology.



# The indicators

## 1. Financial viability of producers / providers

✍ Analysis of costs and benefits

✍ *Indicator:* profit rates

- Share of real estate developer's margin in Gross Domestic Fixed Capital Formation

## 2. Affordability of housing consumers for acceptable housing

✍ *Indicators:* Price-to-income ratio, affordability ratio, rent-to-income ratio, accessibility ratio



# The indicators

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## 3. Technology to reduce the use of natural resources and to mitigate environmental impact of housing activities

- ✍ Trends of technological advancement and application
- ✍ *Indicator:* No. of projects certified by environmental assessment



# Social Sustainability and Housing

- ◆ The social dimension of sustainable housing pertains to:
  - ✍ the social preconditions conducive to the supply and demand of environmentally sustainable housing.
  - ✍ equitable distribution and consumption of housing resources and assets.



# Social Sustainability and Housing

- ✍ Harmonious social relations within the housing system.
- ✍ An acceptable quality of housing and living environment.



# Social Sustainability of Housing

## 1. Social Preconditions for Ecological Sustainability

- ✍ Values
- ✍ Habits
- ✍ Rules
- ✍ Life style
- ✍ Environmental consciousness
- ✍ Regulations

## 2. Equitable Housing Distribution and Consumption

- ✍ Housing equity
- ✍ Housing standards
- ✍ Affordability
- ✍ Role of the government
- ✍ Housing subsidy policies

## 3. Harmonious Social Relations

- ✍ Landlord & tenant relationships
- ✍ Have & have-nots relationships
- ✍ Influence of the stakeholders

## 4. Quality of Housing & Living Environment

- ✍ Internal housing conditions
- ✍ Immediate environment (includes neighborliness)



# Equitable distribution and consumption of housing resources and assets

- ◆ equitable housing policies should maximise choices in housing services and enhance housing mobility
- ◆ should not adversely affect the opportunities of non-targeted households to obtain desirable housing.



# Equity in Housing Distribution and Consumption

## ◆ Indicators

### ✍ Affordability (Private Housing)

- Price-to-income ratio
- Affordability ratio
- Rent-to-income ratio



# Equity in Housing Distribution and Consumption

- ✍ Accessibility to Housing Market
  - Downpayment-to-income ratio
- ✍ Inadequately Housed Household
  - Extent of homelessness
  - Extent of squatter settlement



# Equity in Housing Distribution and Consumption

## ✍ Accessibility to Public Housing

- Length of the waiting list for public rental housing
- Length of the waiting time for public rental housing



# Cultural sustainability of housing

- ◆ Cultural pre-conditions for sustainable housing
- ◆ Acceptable quality of housing conditions
- ◆ Preservation of housing heritage



# Preservation of housing heritage

- ◆ Housing has a physical form and the form reflects how the inhabitants adapt to the natural habitat.
- ◆ Changes in housing form demonstrate how the adaptation evolves with time and technology advancement.



# Proposed indicators - Cultural sustainability

- ◆ Number of recorded preserved residential projects.
- ◆ Number of projects with design reflecting local culture.



# Overlaps among economic, social and cultural sustainability

- ◆ Socio-cultural limits to and pre-conditions for the supply and demand of environmentally sustainable housing.
- ◆ An acceptable quality of housing conditions.



# Socio-cultural preconditions of housing supply and demand

- ◆ Refers to the extent of environmental consciousness in the values, norms, habits and behaviours of housing production and consumption.
- ◆ Production, e.g.
  - ✍ Affects the choice of housing sites - the impact on the natural environment and the existing infrastructure.
  - ✍ Land use planning principles and intensity.



# Socio-cultural preconditions of housing supply and demand

## ◆ Consumption -

- ✍ Reductions in energy consumption, optimal use of green design and measure.
- ✍ Willingness to spend more to acquire green housing
- ✍ Culture of maxima → many to occupy homes bigger than necessary.



# Socio-cultural preconditions of housing supply and demand

- ◆ The role of government.
- ◆ Legislation, laws, regulations and codes: social and cultural values and norms.
- ◆ Require efforts and commitments from the governments.



# Socio-cultural preconditions of housing supply and demand

- ◆ Government subsidies or incentives.
- ◆ Governments to support and spread the knowledge, values and rationality of sustainable housing development.



# An acceptable quality of housing conditions

- ◆ The quality of housing consists of internal housing conditions and the immediate external living environment.
  - ✍ Internal housing conditions: adequacy of housing space, degree of sharing and self-containment, ventilation and natural lighting.



# An acceptable quality of housing conditions

## ◆ Indicators

### ✍ Internal Housing Conditions

- Space standard
- Degree of sharing
- Self-containment
- Inadequately housed households



# An acceptable quality of housing conditions

- ✍ External residential quality
  - Cleanliness in the neighborhood
  - Access to open space
  - Access to community facilities
  - Noise level



# Conclusions

- ◆ The proposed model attempts to be comprehensive, drawing the different facets of housing into two coherent themes:
- ◆ The themes: the ability of the housing sector to continually provide adequate and better accommodation to all, and that the ability of the housing sector to contribute to the economic, social and cultural well being of a place, given the limits of the Earth.



# Conclusions

- ◆ These are the outcomes of housing strategies, policies and programs, and the politics involved.
- ◆ Apart from the ecological dimension, the other dimensions do not pose new concerns in housing. What is new is the integration of these dimensions into a holistic and long term perspective.



# Conclusions

- ◆ If we are serious about advancing sustainable development, such a perspective for housing is indispensable to chart the future of housing.



**~ Thank You ~**