



HARMONISING BETWEEN THE NATURE AND PEOPLE FOR SUSTAINABLE FUTURE

Mangrove Restoration in UNESCO Can Gio Mangrove Biosphere Reserve, Vietnam



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Vietnam National Committee for MAB
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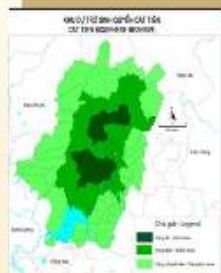


M A N A N D B I O S P H E R E P R O G R A M M E



VIETNAM NATIONAL BIOSPHERE RESERVE NETWORK

Khu DTSQ Tây Nghệ An
: Một hành lang nối kết 3 khu bảo tồn & văn hóa
Western Nghe An Biosphere Reserve: A corridor linking 3 PAs and culturescape



Khu DTSQ Cát Tiên: Loại tể giác một rừng & 4 tỉnh đồng quản lý
Cat Tien Biosphere Reserve: Rhinoceros & co-management of 4 provinces



Khu DTSQ Cần Giờ: Rừng ngập mặn được phục hồi sau chiến tranh
Can Gio Biosphere Reserve: A beautiful rehabilitated mangroves after the war



Khu DTSQ Kiên Giang: 3 vùng lõi, bảo tồn Bộ biển với Cam Pu chia
Kien Giang Biosphere Reserve: 3 core zones, conservation of Dugong

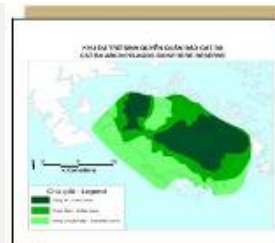


Đề cử Khu DTSQ Mũi Cà Mau: Mẫu chuyển tiếp từ RNM sang rừng tràm
Proposed Mui Ca Mau Biosphere Reserve: Transformation from mangroves to Melaleuca forests

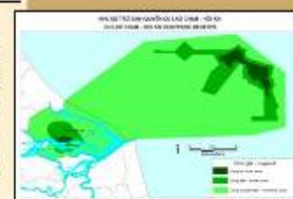
**A natural treasure, beautiful landscapes
A culturescape with rich traditionally values
A quality economy**



Khu DTSQ Châu thổ sông Hồng: 3 tỉnh đồng quản lý, tiếp cận hệ sinh thái;
Red River Delta Biosphere Reserve: co-management of 3 provinces, ecotied ecological approach



Đề cử Khu DTSQ Cù Lao Chàm – Hội An: Nối kết di sản văn hóa và khu BTB
Proposed Cu Lao Cham – Hoi An Biosphere Reserve: Linking cultural heritage and Marine Protected Area



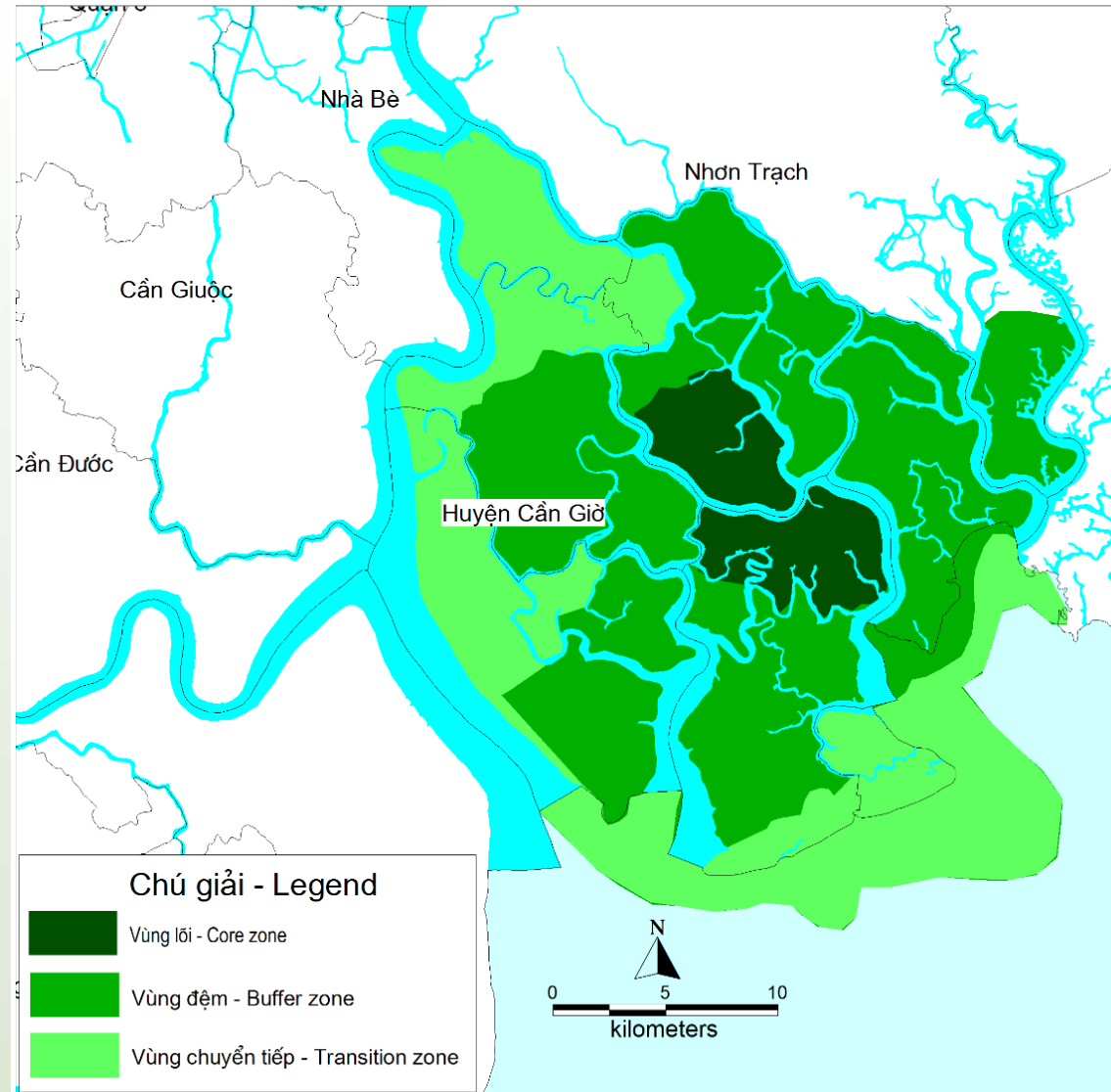
| Khu Dự trữ / sinh quyển / Biosphere Reserves | Vùng Lõi / Core zone (ha) | Vùng đệm / Buffer zone (ha) | Vùng chuyển tiếp / Transition zone (ha) | Tổng số / Total (ha) | Ngày được công nhận / Approved |
|---|---------------------------|-----------------------------|---|----------------------|--------------------------------|
| Khu DTSQ Cần Giờ / Can Gio Biosphere Reserve | 4,721 | 37,339 | 29,310 | 71,370 | 21/01/2001 |
| Khu DTSQ Cát Tiên / Cat Tien Biosphere Reserve | 71,320 | 251,445 | 403,432 | 726,197 | 10/11/2001 |
| Khu DTSQ Cát Bà / Cát Bà Biosphere Reserve | 8,500 | 7,741 | 10,000 | 26,241 | 02/12/2001 |
| Khu DTSQ Châu thổ sông Hồng / Red River Delta BR | 14,137 | 36,840 | 54,541 | 105,518 | 02/12/2004 |
| Khu DTSQ Kiên Giang / Kien Giang Biosphere Reserve | 36,965 | 172,578 | 678,691 | 1,188,234 | 27/12/2006 |
| Khu DTSQ Mên Tân / Tây Nghệ An / Western Nghe An BR | 191,822 | 500,270 | 608,039 | 1,300,131 | 18/08/2007 |
| Tổng số / Total | 328,185 | 1,009,222 | 2,083,968 | 3,421,375 | |
| Đề cử Khu DTSQ Mũi Cà Mau / Proposed Mui Ca Mau BR | 17,329 | 43,309 | 310,858 | 371,496 | Đề cử BRP |
| Đề cử Khu DTSQ Cù Lao Chàm - Hội An / Proposed Cù Lao Cham - Hoi An Biosphere Reserve | 2,471 | 8,465 | 22,220 | 33,156 | Đề cử BRP |





- **UNESCO CAN GIO MANGROVE BIOSPHERE RESERVE**
- UNESCO Can Gio Mangrove Biosphere Reserve that is the first BR in Vietnam, designated in year 2000.

KHU DỰ TRỮ SINH QUYỂN RỪNG NGẬP MẶN CẦN GIỜ CAN GIO MANGROVE BIOSPHERE RESERVE





UNESCO CAN GIO MANGROVE BIOSPHERE RESERVE

- Can Gio is one of 24 Districts of HCM City. Located 60 km from Ho Chi Minh, mangroves in Can Gio are as a green lung for the City and a green barrier for sea level rise, typhoons, and possible tsunami.
- It covers 75,740 hectares and is dominated by mangroves, including both salt water and brackish water species. The mangroves in Can Gio have high biodiversity with more than 200 species of fauna and 52 species of flora.



MANGROVE REHABILITATION AFTER THE WAR

- During the US – Vietnam war. It is estimated that 60% of mangroves has been destroyed by herbicides and other chemical agents.





MANGROVE REHABILITATION

- After the war, especially from 1978-1991, a massive mangrove reforestation program was undertaken by the HCM City Forestry Department.
- In 1991, Can Gio was designated as a coastal protection forest. The reforestation efforts have brought ecological and environmental improvements to Can Gio.





Can Gio Mangrove Biosphere Reserve

- The entire landscape turned into one of the most beautiful and extensive sites of rehabilitated mangroves in the world
- Until 2008 some 30,000 ha were planted with *Rhizophora apiculata*





Can Gio Mangrove Biosphere Reserve

- The CG mangrove BR is divided into 3 zones:
- + The core zone (4,720ha) – long term conservation of biodiversity
- + The buffer zone (37,340ha)- a protective buffer zone for the core zone
- + The transition zone (29,310ha) – allocated for the socio-economic development

- The land use of CG Mangrove BR

| Land-use | Area (ha) | Percent (%) |
|-----------------------|---------------|-------------|
| 1. Forested area | 31,773 | 44.5 |
| a. Forest plantations | 18,963 | 26.6 |
| b. Natural forests | 12,810 | 17.9 |
| 2. Non-forested area | 39,587 | 55.5 |
| a. Waterways | 22,091 | 31.0 |
| b. Utilisted land | 13,983 | 19.6 |
| c. Wasteland | 3,513 | 4.9 |
| Total | 71,361 | 100 |





Can Gio Mangrove Biosphere Reserve

- Currently, found in Can Gio BR
- + 35 species belonging to 19 genera true mangroves
- + 24 species belonging to 22 genera mangrove associates
- In the World Atlas of Mangroves, 30 mangrove species have been recorded for Vietnam





| True mangrove | | Mangrove associate | |
|--------------------------------|----------------------------------|--------------------------------|----------------------------|
| <i>Acanthus ebracteatus</i> | <i>Heritiera littoralis</i> | <i>Allophyllus cobbe</i> | <i>Premna integrifolia</i> |
| <i>Acanthus ilicifoli</i> | <i>Kandelia candel</i> | <i>Annona glabra</i> | <i>Styrax agrestis</i> |
| <i>Acrostichum aureum</i> | <i>Kandelia obvata</i> | <i>Azima sarmentosa</i> | <i>Thespesia populnea</i> |
| <i>Aegiceras floridum</i> | <i>Lumnitzera racemosa</i> | <i>Cerbera manghas</i> | <i>Viscum ovalifolium</i> |
| <i>Avicennia alba</i> | <i>Nypa fruticans</i> | <i>Cerbera odollam</i> | <i>Wedelia biflora</i> |
| <i>Avicennia lanata</i> | <i>Phoenix paludosa</i> | <i>Clerodendron inerme</i> | |
| <i>Avicennia marina</i> | <i>Rhizophora apiculata</i> | <i>Cordia cochinchinensis</i> | |
| <i>Avicennia officinalis</i> | <i>Rhizophora mucronata</i> | <i>Crinum asiaticum</i> | |
| <i>Bruguiera cylindrica</i> | <i>Rhizophora stylosa</i> | <i>Dalbergia candenatensis</i> | |
| <i>Bruguiera gymnorhiza</i> | <i>Rhizophora x lamarckii</i> | <i>Derris trifoliata</i> | |
| <i>Bruguiera parviflora</i> | <i>Scyphiphora hydrophylacea</i> | <i>Finlaysonia abovata</i> | |
| <i>Bruguiera sexangula</i> | <i>Sesuvium portulacastrum</i> | <i>Instia bijuga</i> | |
| <i>Ceriops decandra</i> | <i>Sonneratia alba</i> | <i>Hibicus tiliaceus</i> | |
| <i>Ceriops tagal</i> | <i>Sonneratia caseolaris</i> | <i>Hibicus macrophyllus</i> | |
| <i>Cryptocoryne ciliata</i> | <i>Sonneratia ovata</i> | <i>Lasia spinosa</i> | |
| <i>Dolichandrone spathacea</i> | <i>Xylocarpus granatum</i> | <i>Melaleuca cajuputi</i> | |
| <i>Excoecaria agallocha</i> | <i>Xylocarpus moluccensis</i> | <i>Pongamia pinnata</i> | |



CONSTRAINTS AND CHALLENGES

- Climate change: sea level rise/ saline intrusion, typhoon, ...
- Socio-economic issues: pressures from demographic growth, poverty rate and lack of hygienic and education facilities
- Capacity of forest management





MEASURES TAKEN TO PROTECT BR

A. ENSURE LIVELIHOODS FOR PEOPLE IN MANGROVE

- 1. AQUACULTURE
- 2. ECOTOURISM
- 3. CONTRACTING FORESTLAND TO FARMER HOUSEHOLDS

- B. STRENGTHENING CAPACITY FOR THE FOREST MANAGEMENT BOARD, RANGERS

- C. BUILDING WILDLIFE PROTECTED AREAS (FOR MONKEYS, BATS, BIRDS,..)





SOME ACTIVITIES IN MANGROVE CANGIO BR

- With the support of IUCN and the technical assistance of the Management Committee of Can Gio protection forest, one of the solutions for livelihoods of people in mangroves is tilapia aquaculture under the forest canopy.





MANGROVE ECOLOGICAL SERVICES IN CAN GIO BR

- ECOTOURS IN MANGROVE BR





- **CANGIO – ONE OF The Sustainable Destinations Global Top 100 IN 2014**
- **TRAINING WORKSHOP FOR LOCAL PEOPLE ON TOURISM**





MANGROVE ECOLOGICAL SERVICES IN CAN GIO BR



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- Mangrove as a site for environmental education





LIVELIHOOD FOR LOCAL PEOPLE

- CONTRACTING FORESTLAND TO THE LOCAL PEOPLE IN EXCHANGE FOR ECOLOGICAL CONSERVATION





STRENGTHENING FOREST MANAGEMENT

CAPACITY BUILDING FOR
RANGERS
VARIOUS TRAINING
COURSES, WORKSHOPS



M A N A N D B I O S P H E R E P R O G R A M M E



BUILDING WILDLIFE PROTECTED AREAS

- **PROTECTED AREAS (FOR MONKEYS, BATS, BIRDS,..)**



INTERNATIONAL COOPERATION

- Science and technology as a key for sustainability of biosphere reserves and the country
- Sister system based field study/training as a learning need for sustainability.





Xin trân trọng cảm ơn

Thank
You!



Vielen
Dank

Merci

Thanks

24HCOM.VN





- Overall the implementation of reforestation projects will increase the amount of natural forest. Globally this has great significance to issues such as climate change. Around 20% of all global carbon emissions come from deforestation. Implementing reforestation projects is one such way to address the global carbon crisis. The long terms benefits of reforestation also positively impact the local people and communities through the promotion of their conservation activities.





- For example in areas that have undergone environmental restoration there is typically the option for communities to generate extra income from selling traditional products generated from the forest and also developing the restoration site for eco-tourism. The forests also provide useful locations for schools and students to visit; they will use the sites as learning centres or outdoor classrooms.
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