



Figure S1. NDVI LULC classification map of the river mouth in Nga Son district – Thanh Hoa province obtained from Landsat 1 for 1973 (a), Landsat 5 for 1988 (b), 1995 (c), 2005 (d) and 2010 (e), and Landsat 8 for 2015 (f) and 2020 (g).



Figure S2. Loss of planted mangroves from aquaculture (a) and other land use (b, c) in Tinh Gia district, Thanh Hoa province from 2014 to 2020.

Table S1: Mangrove restoration projects funded by NGOs in Thanh Hoa and Nghe An provinces from the 1990s to 2020.

Program	Area planted (ha)	Period	Species	Reference
Thanh Hoa				
IFRC/JRC	1245	1997-2010	<i>Kandelia candel</i> , <i>Sonneratia apetala</i> , <i>S. caseolaris</i>	(1, 2)
CDF	200	2010-2015		(3)
ACTMANG	147	1999-2000	<i>Rhizophora stylosa</i>	(1)
CARE	458	2006-2014	<i>Kandelia candel</i>	(4, 5)
SCF UK	275	1994-1996	<i>Kandelia obovata</i> , <i>Avicennia marina</i> , <i>Rhizophora stylosa</i>	(1)
UNICEF UK (773 Project)	115	1990-1993	<i>Aegiceras corniculatum</i> , <i>Bruguiera</i> spp.	(1)
PAM	255	1992-1997	<i>Aegiceras corniculatum</i> , <i>Bruguiera</i> spp.	(1)
GCF/UNDP	350	2018-2021	N/A	(6)
WB	482	2017-2023		(7, 8)
Nghe An				
IFRC/JRC	1096	1997-2010	<i>Kandelia obovata</i>	(1)
SCF UK	184	1994-1996	<i>Avicennia marina</i> , <i>Kandelia obovata</i> , <i>Rhizophora stylosa</i>	(1)
WB	158	2017-2023	N/A	(7, 8)

ACTMANG: Action for mangrove reforestation, **AFoCo:** Asian Forest Cooperation Organization, **CARE:** Cooperative for Assistance and Relief Everywhere, **DRC:** Danish Red Cross, **IFRC:** Federation of Red Cross, **JRC:** Japanese Red Cross, **GCF:** Green Climate Fund, **UNPD:** The United Nations Development Program, **IWMC:** Integrated water resource management and urban planning related to climate change, **JICA:** Japan International Cooperation Agency, **Oxfam GB:** Oxfam Great Britain, **PAM** (or WFP – the World Food Program);, **SCF-UK:** Safe the Children Fund THE UNITED KINGDOM, **SDC:** Suma-Denmark Component, **TEPCO:** Tokyo Electric Power Company, **UNICEF UK:** UNICEF United Kingdom, **WB:** world bank, **CDF:** Central Disaster Fund

Table S2: Mangrove restoration funded by the Vietnam government in Thanh Hoa and Nghe An province from the 1990s to 2020.

Program	Area planted (ha)	Period	Reference
Thanh Hoa			
National Target Programme to Respond to Climate Change	300	2014-2015	(3)
Support Program to Respond to Climate Change (SP-RCC)	112	2015-2020	(3)
Program to consolidate, protect and upgrade sea dykes	100	2015-2020	(3)
Project on plating and restoration of coastal forests in Thanh Hoa	228	2016- 2020	(9)
Sea dyke maintenance	29.6	2015-2017	(10-12)
Nghe An			
Forest Protection and Development Plan for the period of 2011-2020	211.1	2012-2020	(13, 14)
SP-RCC (funds provided for dyke and irrigation projects which include mangrove plantation category)	92.6	2014-2015	(3)
Program to consolidate, protect and upgrade sea dykes	280	2015-2020	(3)