

## DEVELOPMENT AND CHALLENGES ON CONSERVATION POLICY AND LAWMAKING IN THE CORAL TRIANGLE REGION

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**Abstract** - The research aims to determine the current environmental policy used in the Coral Triangle to mitigate the combined and immediate threats from destructive fishing, bycatch, and climate change, as well as examining the challenges in protecting coral reefs and activities in the Coral Triangle. The method used in the research is Normative Research Method. The thesis found that the six countries in the Coral Triangle has established a joint initiative named Coral Triangle Initiative Declaration on Coral Reefs, Fisheries, and Food Security (CTI-CFF) to help solving the problem. The initiative has been involved in the creation of MPA networks, capacity building, and fisheries management. However, there are multiple issues in the conservation programs, which includes differences in economic power and customs, weak governance, and poor enforcements. The six countries need to establish programs which will work across the region, not just at national level. They also have to raise the commitment to enforcement along the region, and connect programs from local to national level.

**Keywords:** Coral Triangle, Environmental Conservation.

### INTRODUCTION

Southeast Asia and the Pacific harbors  $\frac{1}{3}$  of the world's 284,000 km<sup>2</sup> of coral reefs, known as the "Coral Triangle". Coral reefs in the region contains 76% of global reef-building coral species and 37% of reef fish species<sup>1</sup>. Coral species in Southeast Asia is especially diverse; there are more coral species on a single island in Southeast Asia than the entire Caribbean.

The Coral Triangle is a marine area located in the western Pacific Ocean. It includes the waters of Indonesia, Malaysia, the Philippines, Papua New Guinea, Timor Leste and Solomon Islands.<sup>2</sup> The region nurtures six of the world's seven marine turtle species and more than 2000 species of reef fish.<sup>3</sup> Over 120 million people live in the Coral Triangle and rely on its coral reefs for food, income and protection from storms.<sup>4</sup> Climate change also pose an immediate threat to reef's ecosystem. Climate change affects coastal ecosystems in the Coral Triangle through warming, rising seas and ocean acidification.<sup>5</sup> Widespread coral reef bleaching, sea level rise and seawater acidification endanger marine animals like reef fish and

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<sup>1</sup> Simon Foale, et al., "Food Security and Coral Triangle Initiative," *Marine Policy* 38 (2013), p.175

<sup>2</sup> Coral Triangle, <http://www.worldwildlife.org/places/coral-triangle>, accessed 20/12/2016

<sup>3</sup> *Loc. Cit.*

<sup>4</sup> *Loc. Cit.*

<sup>5</sup> *Loc. Cit.*

marine turtles, negatively impact local livelihoods such as fishing and tourism, and threaten a critical supply of protein for more than one hundred million people.<sup>6</sup>

The region is facing clear and present threat from destructive fishing, bycatch, and climate change. About 95% are at risk - overfishing has affected almost every reef in the region, destructive fishing practices are common, land-based pollution is significant, and coastal development is a growing threat.<sup>7</sup> Reefs at Risk estimated that by the 2030s, more than 40 percent of reefs will be at very high or critical threat level if current local threat remain constant in the future.<sup>8</sup> The projections of the threat could be even higher if future population growth, coastal development, and agricultural expansion were considered.<sup>9</sup>

## RESEARCH METHODOLOGY

This research is a normative research, and will explain the current state of conservation in the Coral Triangle region, as well as the policy used by the Coral Triangle countries (CT6 countries) in protecting the threatened reefs. The research will also try to determine the obstacles the countries are facing.

### A. Development and Challenges on Conservation Policy and Lawmaking in the Coral Triangle Region

In order to mitigate the problem surrounding the Coral Triangle, the CT6 countries in May 2009 signed the Coral Triangle Initiative Leader's Declaration on Coral Reefs, Fisheries, and Food Security. The declaration later gave birth to the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF). CTI-CFF is a multilateral partnership that aims to safeguard the marine and coastal resources of the Coral Triangle.

Under the CTI-CFF, the six Coral Triangle countries collectively adopted a Regional Plan of Action, which was soon followed by each country's adoption of a CTI-CFF National Plan of Action that aligns with the goals of the regional plan. The Regional Plan of Action is organized around five goals, each supported by a technical working group chaired by one of the six countries:

1. Priority seascapes designated and effectively managed (chair: Indonesia)

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<sup>6</sup> *Loc.Cit.*

<sup>7</sup> About CTI-CFF, <http://coraltriangleinitiative.org/about-us>, accessed 20/12/2016

<sup>8</sup> Burke et al., *Reefs at Risk Revisited in the Coral Triangle*, (Washington, DC: World Resources Institute, 2014), p.23

<sup>9</sup> *Loc.Cit.*

2. Ecosystem approach to management of fisheries and other marine resources fully applied (chair: Malaysia)
3. Marine protected areas established and effectively managed (chair: Philippines)
4. Climate change adaptation measures achieved (chairs: Indonesia and Solomon Islands)
5. Threatened species status improving (chair: Philippines).

All the country reported overfishing and destructive fishing as primary threats to coral reefs.<sup>10</sup> Other major stressors are excessive nutrient inputs and pollution, land and coastal development, and exploitation of threatened species.<sup>11</sup>

### **1. Current Conservation Policy in the Coral Triangle Coral Triangle Marine Protected Area System**

Marine Protected Area (MPA) is a discrete geographic area that has been designated to enhance the conservation of marine and coastal resources and is managed by an integrated plan that includes MPA-wide restrictions on some activities such as oil and gas extraction and higher levels of protection on delimited zones, designated as fishery and ecological reserves within the MPAs.<sup>12</sup>

There are more than 1,900 MPAs covering 200,881 km<sup>2</sup> within the Coral triangle region (as of 2014).<sup>13</sup> In order to create a well-monitored network of MPAs, CTI-CFF in 2013 founded the Coral Triangle Marine Protected Area System (CTMPAS) Framework and Action Plan. The CTMPAS is mandated in CTI-CFF Goal 3, which objective is to create a “comprehensive, ecologically representative and well-managed region-wide system” by 2020. The primary outcomes of a well-established CTMPAS will be:<sup>14</sup>

- effectively managed marine areas and networks throughout the CT6;
- multi-objective MPAs/networks that support sustainable fisheries, biodiversity conservation, and coastal and community resilience to climate, social or economic changes;

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<sup>10</sup> Asian Development Bank, *Regional State of the Coral Triangle* (Mandaluyong City, Philippines: Asian Development Bank, 2014), p.xi

<sup>11</sup> *Loc. Cit.*

<sup>12</sup> US National Research Council, *Marine Protected Areas: Tools for Sustaining Ocean Ecosystems* (Washington, DC, United States of America: National Academy Press, 2001), p.12

<sup>13</sup> Alan T.White, et al., “Marine Protected Areas in the Coral Triangle: Progress, Issues, and Options”, *Coastal Management* 42:2 (2014), p.87

<sup>14</sup> Coral triangle Initiative on Coral reefs, Fisheries and Food Security (CTI-CFF), *Coral Triangle Marine Protected Area System (CTMPAS) Framework and Action Plan*, p.28

- MPAs/networks that support sustainable livelihoods and maintain ecosystem integrity that enhances human well-being by providing continuous services to resource users and coastal communities

### Capacity Building Approach

CT6 countries work with NGOs under the Coral Triangle Support Partnership (CTSP) scheme to enhance appreciation and understanding of the environment from national government to coastal community. The scheme prepares the stakeholders (national government and coastal community) for subsequent technology transfer and skills-building programs, eventually allowing them to perform their roles effectively in managing their marine and coastal resources.

CTSP, partnering with United States Agency for International Development (USAID) has conducted capacity building projects in the CT6 countries, resulting in varying positive results.

USAID's CTSP provided essential support to Solomon Island's Ministry of Environment to sanction the 2010 Protected Areas Act. CTSP financially helped the legal work required to write the act and supported officials who headed the legislation.<sup>15</sup> The act gives legal protection to communities who register protected areas and commit to using various traditional and modern conservation measures.<sup>16</sup>

USAID also trained "Fish Wardens" in Philippines (known locally as *Bantay Dagat*). The wardens were deputized and equipped with legal authority to patrol around the municipal waters of Sotangkai and Languyan, in Tawi-Tawi Province.<sup>17</sup> The patrol has since influenced the decrease in illegal and destructive fishing, as well as educated the locals on the importance of protecting the marine environment.<sup>18</sup>

CTSP conducted a wide variety of project in the CT6 countries to help conserve the Coral Triangle. As of 2014, CTSP and its partners has been helped in the adoption or proposal of more than a hundred policies, laws, and agreements supporting improved marine

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<sup>15</sup> United States Agency for International Development (USAID), *A Law, A Plan, A Team*, USAID's Success Story from Solomon Island, 1 July 2013, available at <http://www.coraltriangleinitiative.org/library/outreach-success-stories-solomon-islands>

<sup>16</sup> *Loc.Cit.*

<sup>17</sup> United States Agency for International Development (USAID), *Fish Wardens Protect Marine Resources*, USAID's Success Story from Philippines, 1 July 2013, available at <http://www.coraltriangleinitiative.org/library/outreach-success-stories-philippines>

<sup>18</sup> *Loc.Cit.*

management.<sup>19</sup> As previously mentioned, one of the major partner for the CTSP scheme is USAID, who committed a five years investment totaling around US\$57 million.

### **Fisheries and Conservation Objectives**

Two of CTI-CFF goals are to create an efficient management of fisheries as well as other marine resources (Goal 2) and improve the status of threatened species (Goal 5). Goal 2 have four targets:

- i. Strong legislative, policy and regulatory frameworks in place for achieving an ecosystem approach to fisheries management (EAFM)
- ii. Improved income, livelihoods and food security in an increasingly significant number of coastal communities across the region through a new Sustainable Coastal Fisheries and Poverty Reduction Initiative (“COASTFISH”)
- iii. Effective measures in place to help ensure exploitation of shared tuna stocks is sustainable, with tuna spawning areas and juvenile growth stages adequately protected
- iv. A more effective management and more sustainable trade in live-reef fish and reef-based ornamentals achieved

Meanwhile, Goal 5 has only one target: an improved status of sharks, sea turtles, seabirds, marine mammals, corals, seagrass, mangroves, as well as other identified threatened species.<sup>20</sup> Timeline of the target is set that by 2015, population decline of threatened species shall be halted and a further improved status by the year 2020.<sup>21</sup> However, this is one of the indicator which is yet to be finalized by the CTI-CFF (as of November 2016).<sup>22</sup>

The two goals are linked since species in the Coral Triangle are especially threatened by the unsustainable fishing activities. Overfishing and the loss of key habitats are undermining fisheries production, food security, livelihoods, biodiversity and the long term health of marine ecosystems.<sup>23</sup>

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<sup>19</sup> Tory Read, *Stewarding Biodiversity and Food Security in the Coral Triangle: Achievements, Challenges, and Lessons Learned*, USAID CTSP Report, (Coral Triangle Support Partnership, 7 February 2014)

<sup>20</sup> Coral triangle Initiative on Coral reefs, Fisheries and Food Security (CTI-CFF), *Coral Triangle Marine Protected Area System (CTMPAS) Framework and Action Plan*, p.41

<sup>21</sup> *Loc. Cit.*

<sup>22</sup> CTI-CFF Annual Activities Report 2015-2016, available at <http://www.coraltriangleinitiative.org/library/annual-activities-report-2015-2016-cti-cff-regional-secretariat>, p.35

<sup>23</sup> Alan T.White and Alison Green, Policy Brief: *Using Marine Protected Area Networks to Achieve Fisheries, Biodiversity and Climate Change Objectives*, p.1, October 2014, available at <http://www.coraltriangleinitiative.org/library/policy-brief-using-marine-protected-area-networks-achieve-fisheries-biodiversity-and-clima-0>

The Coral Triangle is an important world supplier of fish, which makes sustaining fish population and improving the status of biodiversity a very challenging task. This, combined with a problematic food security in the region (especially in coastal community),<sup>24</sup> makes it even harder to help sustain the marine environment. Around 49.9% of fishing households in the Philippines live below the national poverty line.<sup>25</sup> Poverty and malnutrition, combined with lack of access to animal food sources are still ongoing problems in Timor Leste, since their independence in 2002.<sup>26</sup>

CTI-CFF emphasizes ecosystem approach to fisheries management, which is reiterated in CTI-CFF Regional Plan of Action under the first goal. Ecosystem-based management is framework that integrates biological, social, and economic factors into a comprehensive strategy aimed at protecting and enhancing sustainability, diversity, and productivity of natural resources.<sup>27</sup> Ecosystem-based management emphasizes the protection of ecosystem structure, functioning, and key processes; and is place-based in focusing on a specific ecosystem and the range of activities affecting it.<sup>28</sup> It explicitly accounts for the interconnectedness among systems, such as air, land, and sea; and integrates ecological, social, economic, and institutional perspectives, recognizing their strong interdependences.<sup>29</sup> Thus, Ecosystem Approach to Management of Fisheries (EAFM) is a component of ecosystem-based management, which primarily focuses on fisheries.<sup>30</sup>

EAFM is a preferred option for sustainable livelihoods and food security under the CTI-CFF because it is more cost-effective than conventional fisheries management.<sup>31</sup> CTI-CFF work on EAFM has so far focused on achieving the target of “Strong legislative, policy, and regulatory frameworks are in place for achieving EAFM”, which is the basic and most important to ensure effectiveness of other targets.<sup>32</sup>

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<sup>24</sup> Raniel Cabral, et al., “Assuring Sustainable Fisheries Development”, *Economics of Fisheries and Aquaculture in the Coral Triangle*, (Philippines: Asian Development Bank, 2014), p.141

<sup>25</sup> *Ibid.*, p.142

<sup>26</sup> *Loc.Cit.*

<sup>27</sup> Raniel Cabral, et al., “Assuring Sustainable Fisheries Development”, *Economics of Fisheries and Aquaculture in the Coral Triangle*, (Philippines: Asian Development Bank, 2014), p.163. The definition is based on COMPASS Scientific Consensus Statement published on 21 March 2005, available at [http://www.compassonline.org/science/EBM\\_CMSP/EBMconsensus](http://www.compassonline.org/science/EBM_CMSP/EBMconsensus)

<sup>28</sup> *Loc.Cit.*

<sup>29</sup> *Loc.Cit.*

<sup>30</sup> *Ibid.*, p.162

<sup>31</sup> Pomeroy, et al., *Coral Triangle Regional Ecosystem Approach to Fisheries Management (EAFM) Guidelines*, (Hawaii: The USAID Coral Triangle Support Partnership, 2013), p.12, 21

<sup>32</sup> Raniel Cabral, et al., (2014), *Op.Cit.*, note 27, p.164

Conservation measures are also being implemented by CT6 countries.<sup>33</sup> These include seasonal closures in observance of important fish life cycle stages, fish habitat restoration strategies, restocking of fishery resources, and ban on catching some species of fish and invertebrates.<sup>34</sup> Compared with input controls, however, these measures are employed more locally and vary greatly in detail across the CT6 countries.<sup>35</sup> Subsidies are implemented primarily by the more industrialized Coral Triangle Southeast Asia (CT-SEA) countries, although the move of PNG, Solomon Islands, and Timor-Leste to further tap their vast fishery resources might result in the application of subsidies.<sup>36</sup>

## 2. Challenges in Protecting Coral Reefs and Regulating the Activities in the Coral Triangle

The most prevalent challenge currently faced by the CT6 countries perhaps come from from regional level. The threats faced by Coral Triangle are widespread and CT6 countries are diverse in cultures, government forms, economies, human development, and coastal resources issues.<sup>37</sup>

MPAs are a new tool for Timor Leste and Solomon Island, but is not the case with Philippines, who has already been working on MPAs for years prior to the CTA-CFF initiative.<sup>38</sup> Another issue is that government tend to rely on exposure and “face value achievement”, meaning they only target the goal set under CTI-CFF by the number, and not by efficiency or effectiveness. Table 3 shows that 1,972 MPAs cover 200,881 km<sup>2</sup> of marine area, or 17.8% of regional total.<sup>39</sup> However, the number is misleading since approximately only 1% of the MPAs are considered “effectively managed”.<sup>40</sup> MPAs scheme is not necessarily about the number or percentile of coverage, but rather about the effectiveness and efficiency of the management.

While Indonesia, Malaysia, and Timor-Leste have more than 10% of their coral reefs included within legally designated MPAs, the real challenge of marine conservation in the region is to make the existing MPAs more effective in achieving their intended management objectives.<sup>41</sup> The emerging efforts to monitor MPA effectiveness is showing that areas

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<sup>33</sup> *Ibid.*, p.152

<sup>34</sup> *Loc.Cit.*

<sup>35</sup> *Loc.Cit.*

<sup>36</sup> *Loc.Cit.*

<sup>37</sup> Tory Read (2014), *Op.Cit.*, note 19, p.28

<sup>38</sup> *Loc.Cit.*

<sup>39</sup> A.T.White, et al., (2014), *Op.Cit.*, note 113, p.97

<sup>40</sup> *Ibid.*, p.97-98

<sup>41</sup> *Ibid.*, p.98

managed under a no-take regime or a regulated fishing area that are strictly enforced are woefully lacking with only about 1% of coral reefs within MPAs in the region rated as effectively managed.<sup>42</sup> The problem may be attributed to the high level of poverty in the coastal community, insufficient institutional and technical capacity, and lack of community support.<sup>43</sup>

Differences in marine and coastal resources ownership, varying from customary local tenure to total government ownership to constitutionally assured open access, mean that governments have to approach resource management in different ways.<sup>44</sup> These differences make it challenging to provide solutions that can be applied universally across the Coral Triangle.<sup>45</sup> Ultimately, it is a very challenging task to provide a consistent project at regional level, considering all the differences and details at national levels.<sup>46</sup> This is the reason why CTI-CFF programs has mostly been conducted at national level, with the hope that in the coming years the programs could be developed to work consistently on regional level.

Weak governance is arguably another concern in the region. Corruption, conflicts of interest, inadequate resources (physical, human, and financial) for fisheries management, poor enforcement, illegal fishing, lack of stakeholder participation or inclusion in decision making, lack of a clear vision for the fishery sector, and user conflicts are some of the characteristics of weak governance in fisheries.<sup>47</sup> Corruption is perhaps the most prevalent issue in the CT6 countries, with illegal payments for fishing licenses, permits, or access rights by politicians and public servants are the most pervasive and direct form of corruption in the fishery sector.<sup>48</sup> According to World Bank Worldwide Government Indicators, Malaysia is the only country to score positively in the Control of Corruption indicator.<sup>49</sup>

Multiple publications<sup>50</sup> have cited the weakness in enforcement<sup>50</sup> as a key problem in the CT6 countries. Poor enforcement results in illegal fishing practices, such as the use of

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<sup>42</sup> *Loc.Cit.*

<sup>43</sup> *Loc.Cit.*

<sup>44</sup> Tory Read (2014), *Op.Cit.*, note 19, p.28

<sup>45</sup> *Loc.Cit.*

<sup>46</sup> *Loc.Cit.*

<sup>47</sup> Raniel Cabral, et al., (2014), *Op.Cit.*, note 27, p.145

<sup>48</sup> *Loc.Cit.*

<sup>49</sup> Worldwide Governance Indicators, <http://info.worldbank.org/governance/wgi/#reports>, accessed 15 February 2017

<sup>50</sup> Publications from Asian Development Bank and USAID have mentioned issues surrounding poor enforcement in CT6 countries. See Raniel Cabral, et al., "Assuring Sustainable Fisheries Development", *Economics of Fisheries and Aquaculture in the Coral Triangle*, (Philippines: Asian Development Bank, 2014) and Tory Read, *Stewarding Biodiversity and Food Security in the Coral Triangle: Achievements, Challenges, and Lessons Learned*, USAID CTSP Report, (Coral Triangle Support Partnership, 7 February 2014)



explosives and chemicals and fine-meshed nets, targeting of fish spawning aggregations, and intrusion of commercial fishing fleets and local boats in taboo or no-fishing zones.<sup>51</sup> There has been attempt to tackle the issue of enforcement by involving coastal community and fishermen to patrol as fish wardens. However, it is risky and unsustainable to exclusively rely on local community to patrol.<sup>52</sup>

USAID reported that the issue of enforcement has been obvious since the beginning of the umbrella project between them and CTI-CFF named United States Support to the Coral Triangle Initiative (USCTI). CTSP commissioned a rapid assessment of the problem in 2012 in Malaysia, PNG, Philippines, and Solomon Islands. The assessment revealed a relatively low level of compliance with existing marine resource rules and regulations across the four countries.<sup>53</sup> The primary drivers of intentional noncompliance include poverty, meeting food security requirements, meeting household income needs, emergencies, greed, corruption, and disputed ownership claims over fishing grounds.<sup>54</sup> The current level of fines and sanctions are not seen as sufficient deterrents to potential violators, especially to well-armed, illegal foreign commercial fishers.<sup>55</sup> Compounding all of this, law enforcement resources are uniformly inadequate, particular within coastal waters, and crimes against persons and property get more attention and investment than crimes against the marine environment. For these reasons, enforcement was not prioritized for early actions in the first round of CTI-CFF regional priorities, especially as transboundary institutions and examples were few.<sup>56</sup>

## CONCLUSION

CTI-CFF is established to accelerate reef recovery in the Coral Triangle. Most of the project and policy conducted by CTI-CFF and its partners have been practiced at local and national level, and less on regional level. However, it does not necessarily mean CTI-CFF is not capable of conducting regional scale projects, but rather that the local community is a critical starting point, and in the future more regional policy can materialize. The initiative has five goals, each chaired by members of the initiative. MPAs network management have been generally centralized on local or municipal governments, as evidenced by practices in the Philippines, Solomon Island, Papua New guinea, and Timor Leste. CTI-CFF also

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<sup>51</sup> Raniel Cabral, et al., (2014), *Op.Cit.*, note 27, p.145

<sup>52</sup> Tory Read (2014), *Op.Cit.*, note 19, p.29

<sup>53</sup> Tory Read (2014), *Op.Cit.*, note 19, p.29

<sup>54</sup> *Loc.Cit.*

<sup>55</sup> *Loc.Cit.*

<sup>56</sup> *Loc.Cit.*

partnered with multiple organizations including ADB, USAID and WWF to help support the conservation effort. The partnership has resulted in numerous capacity building programs scattered around coastal community in the Coral Triangle. The conservation objectives are conducted by creating an ecosystem based management approach, focusing on fisheries. The management aims to control fish stock and habitat, as well as avoiding more damage to the environment which risk more harm to endangered species.

The thesis found that one of the biggest challenge in conservation effort is the difficulty in creating universal programs which work across the region. Currently, most of the programs are handled by local or national governments, which makes it harder to mitigate overlapping issues in the countries' borders. Countries in the region are also facing problems in efficiently managing the MPAs and the networks. Other challenges are weak governance and enforcements, with resulted in corrupt practices and illegal fishing went unpunished. Another problem comes within the coastal community themselves, whom mostly are experiencing poverty and food security issues.

The biggest problem highlighted in this thesis started at regional level. CT6 countries need to establish a region wide regulations which will most likely work with most, if not all, CT6 countries regardless of national differences. The most crucial starting point is the coastal community, since most of them embrace traditionalism and local wisdom in interaction with the marine environment. Government must not leave the community to work by themselves and instead have to lead the conservation effort.<sup>57</sup> Enforcement is another key issue which needs to be addressed. Many people across the CT6 talked about the need to increase commitments to enforcement, and they noted that agreements across local, provincial, and national boundaries are key components of lasting solutions to enforcement issues.<sup>58</sup>

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<sup>57</sup> Tory Read (2014), *Op.Cit.*, note 19, p.34

<sup>58</sup> *Loc.Cit.*

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