



**Reef Check Indonesia 2001:  
Program Summary and Report of Training of Trainers Workshop  
and Regional Conference, July, 2001**

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### **Wallacea Bioregion and Coral Reef Conservation Campaign**

WWF (World Wide Fund for Nature) began operations in Indonesia in 1962 as a part of WWF International and was called the Indonesia Program. Its primary focus was in the area of endangered species conservation. Since 1998 the Indonesia Program changed its status to become a national organization under the name of the WWF Indonesia Foundation. The implication was that WWF Indonesia was now more independent in planning and implementing program activities and therefore it must also be more independent with respect to finding sponsorship for its activities. With this independence, decentralization and a better focus in the field, WWF Indonesia divided into three organizations based in three bioregions, namely, the bioregion of Sundaland (Sumatra, Java, and Kalimantan), the Wallacea Bioregion (Sulawesi, Maluku, Bali and Nusa Tenggara) and the Sahul Bioregion (West Papua).

With respect to the Wallacea Bioregion Program, approximately 80% of the issues deal with coastal and marine areas as it is comprised primarily of small islands. With its office in Denpasar since 1999, the program's activities were begun in Bali and eventually were expanded into other parts of the bioregion. For coastal and oceanic issues, WWF Wallacea developed its first three programs: sea turtle conservation, coral reef conservation, and sustainable fishing practices. One of the coral reef campaign programs pioneered and developed by WWF since 1997 is Reef Check.

### **Growth of the Reef Check Program in Indonesia**

Coral reefs are an ecosystem that contains the highest biological diversity in the world. As well as attracting millions of divers and tourists from all over the world, coral reefs act to protect beaches from storms and large waves that cause beach abrasion and erosion. If coral reefs are well managed, reef fish and other resources found in coral reef ecosystems will be available as sources of food and income for coastal communities.



Started in 1996, Reef Check (RC) is the largest coral reef education, monitoring and management program in the world and facilitates numerous local communities in monitoring coral reefs. Reef Check is carried out as a voluntary and cooperative effort among its participants.

While data obtained is still scientifically accurate, RC's methods are easy and simple so that many people can be

**Figure 1: Reef Check in Derawan, Indonesia**

involved. By using the same methods throughout the world, we can pinpoint global trends in coral reef ecosystems. RC also raises public awareness and concern for the inherent value of coral reefs, emerging threats to them and solutions to this undervalued resource.

Since its Indonesian launching in August 1997, RC has already made a substantial impression, seen by the number of sites and volunteers in a program that continues to grow year after year. In 1999, the first meeting for National Training of Trainers Reef Check (ToT National Reef Check) involved 31 participants from all over Indonesia. Participants then returned to their homes and initiated their own Reef Check programs in their respective areas and collected data from eight



locations and 33 separate sites with a total of 134 volunteers. Continuing into 2000, the number of sites reached 11 locations with 40 observations sites. These activities were supported by 246 volunteer divers and five researchers who over a period of time from August to December of 2000 with additional support from government agencies, private companies, NGO's as well as universities and various media.

**Figure 2: Participants at the First Training of Trainers workshop.**

In 2001, WWF Wallacea, the national coordinator for Reef Check Indonesia, conducted a variety of activities. Training activities were held in Bali and on Aceh<sup>1</sup> starting with a divers training program for five government officials in Bali. After the successful training of government officials, the program expanded to train 20 participants in Reef Check methodology at a national Training of Trainers (ToT) was held on July 23-24<sup>th</sup>.

Following the National ToT, WWF hosted a national workshop in order to define the goals and network the circle of organizations involved in Reef Check across Indonesia. The long-term goals defined by the workshop were to create a single network with broad support in order to facilitate independent funding for Reef Check Indonesia. On the last day of the workshop, the participants agreed to create the Indonesia Reef Check Network. This was felt to be extremely vital to efforts to expand Reef Check's potential in the future. Following the workshop, a press conference was held in order to disseminate the data collected in 2000 and to the current conditions of coral reefs in Indonesia to the government and public.

To close the host of Reef Check activities, the seminar participants were divided into various groups to perform Bali Reef Check 2001, using RC data and methods, at Nusa Lembongan, Padang Bali, Amed, Tulamben and Sanur.

<sup>1</sup> Training was conducted on Sabang Island in Aceh, with the assistance of Lumba-Lumba Dive Center.

## Workshop Proceedings

### Foreword

God's blessings and mercy, the range of activities of Reef Check Indonesia 2001, beginning with dive training for government officials, National Training for Trainers, the National Workshop, a press conference and Bali Reef Check 2001 held in Denpasar and the coastal areas of Bali from July 17<sup>th</sup> until July 27<sup>th</sup>, 2001, have been successfully carried out. All of the participants representing various organizations from all over Indonesia have energetically joined in the aforementioned activities.

The goal of these activities was to expand the capacity of Reef Checkers in data collection, to create a viable network together for various coral reef ecosystems and to generate a new enthusiasm for future Reef Check programs in Indonesia. Through the press conference, our efforts will arouse awareness in relevant government agencies as well as the public so that they can play a part in efforts to save the Indonesia's coral reefs.

The numerous difficulties faced by the Reef Check Program in Indonesia, as well as input and ideas for the development of the program have been summarized in these proceedings and will be used for planning Reef Check activities in each of the program areas. It is hoped that this will solidify and strengthen the Reef Check system.

Hopefully all that we have planned will become reality. We must acknowledge that nothing is perfect, and we apologize for any shortcomings, unpleasant actions or words to both participants and readers of this report. The team would also like to offer great thanks to all the participants and others who have given us their assistance, cooperation, faith and active participation. We pray that God is pleased with our efforts carried out for the benefit of nature and humankind.

Denpasar, August 2001  
Dive Training Team, ToT,  
Workshop and National Reef Check  
Press Conference, Reef Check Bali 2001

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**Welcome from the National Reef Check Indonesia Coordinator  
Ketut Sarjana Putra, Director WWF Wallacea**

Good Morning. I would like to thank Mr. Sarwono for taking the time to come to Bali, and also to all of our friends, Reef Checkers as well as coral reef experts who have taken the opportunity to join together with WWF Wallacea here in Bali. I will keep this welcome speech brief, because we would like to take advantage of this time to discuss coral reefs with Mr. Sarwono Kusumaatmadja who is a senior advisor for Reef Check.

We here at the WWF Wallacea Program apologize if the meeting place and facilities that we have provided seem limited and hope that it will not pose any problems or prevent us from working together in order to create the Reef Check program or any other program to improve coral reefs.

As much as possible, you have been informed that Reef Check Indonesia was begun in August 1997 in Karimunjawa, Central Java. At that time, Mr. Sarwono launched the Reef Check Indonesia program so that now it can be said that he has become a senior advisor of this program. Because it was based on the commitment of this esteemed man to create conservation and support us all in the ocean conservation movement and more specifically as it relates to coral reefs here in Indonesia, Mr. Sarwono until now has proven his continuing commitment by coming here and working together with us to do Reef Check in Bali.

Reef Check activities in Bali have been divided into phases, the first of which is dive training aimed at several people deemed to possess the capacity to perform a Reef Check. Because these individuals do not know how to dive WWF will facilitate their training in diving. This will be followed by the Reef Check Training of Trainers which was begun yesterday in Sanur and I am sure that the ladies and gentlemen present here today can already put into practice the simple monitoring techniques for coral reefs and we can all do this in the field. How we synchronize that data from one table to another so that the presentation of information is interesting and useful is part of a needed management program for coral reefs.

At this point in time, we will continue the variety of Reef Check programs with this Indonesia National Reef Check Workshop. It comes at a crucial point in time as after 5 years running this program, we find an increasing needs for both implements and infrastructure for each organizer to support continued monitoring of coral reefs.

If the number of participants is already enough, we also need to implement a mechanism to improve our communications to create a better database about coral reefs. That is why this workshop has been organized: so that our perceptions are united and that we have a common objective for Reef Check in the future. We already know that the methods used in RC are simple, different from Line Intercept Transect. Even if now and in the future we have the same perceptions, will we need to improve RC methods so that we can monitor the level of coral reef loss? Or what percent of reefs have grown? And what is our capacity to repair the reefs? There is the possibility that we can make a dialog together to compare indicators where we must integrate the aforementioned model so that a layperson can easily understand it.

The second hope from WWF Wallacea is that we can all work together on the national level. If we all use the same method, we can speak about the same issues at the national level as they do in Australia, the Philippines, Malaysia, and other places that use the same method.

The way we speak of levels of threats will also be the same. From there we can create a singular alternative solution about management practices that we can apply in each coral reef area in Indonesia. We are proud that our friends from the many provinces have demonstrated great commitment to this cause. If we look to the past, in 1997 we had 125 volunteers. In 1999, we had 134 volunteers and for 2000 that number has increased to 246 volunteers. How very proud we are that these numbers are increasing, because our primary goal at Reef Check is to raise concern, and now there are many young people deeply committed to coral reef conservation. Because of this we are doing the Training for Trainers, which will create new capacity for Indonesia. Training for Trainers included 33 people from eight areas in Indonesia. Now, we have an additional 18 people from other areas.

If we look sites managed by RC, in 1999 there were 8 areas that contained a total of 33 sites. In 2000, our efforts were expanded to include eleven locations in ten provinces with forty sites. The annual compilation of data for a project of this size has given us a lot of valuable information. Even if we are lacking in scientific detail, we can at least present information about the state of coral reefs. Because of this, we sincerely hope for firm cooperation and participation so that we can communicate between networks/ nodes within Reef Check Indonesia. This will be of great use in the future. If Reef Check activities at each site are managed at the local level, RC's capacity will grow and we will create an ethical conservation movement especially with respect to coral reefs in Indonesia. This is our hope.

Thank you, and Good Luck in your workshop activities.



## **Welcome briefing by Sarwono Kusumaatmadja**

“Reef Check as a Coral Reef Monitoring Network in Indonesia”  
Presented at the Indonesia National Reef Check Workshop 2001  
Denpasar, 25 July, 2001

Thank you to WWF Wallacea, first and foremost to Ketut Sarjana Putra for his invitation to contribute to the success of this program.

Actually, foreigners have conducted coral reef checks since the nineteenth century, that is, Alfred Russell Wallacea was the one who traveled around this country and with his own method monitored the coral reefs of Indonesia. Jacques Cousteau and many others who made observations and subsequent reports followed him. Those reports became a part of the library about coral reefs in Indonesia that perhaps are a richer treasure than any existing library in Indonesia. Indonesia itself has only recently implemented Reef Checks through LIPI (Lembaga Ilmu Pengetahuan Indonesia or Indonesian Institute for Science and Knowledge), specifically through a group of scientists associated with LIPI's Oceanographic Institute and I have participated in those efforts at Komodo Island in 1994. I was also involved in the Coremap program that was a multilateral effort between the government of Indonesia, the Asian Development Bank and the World Bank. Directly I also participated in Reef Check that was organized by a group from England that interestingly enough connected their Reef Check activities to maritime tourism and community empowerment in the Banggai Islands.

The question is why those foreigners were so interested in Indonesia's coral reefs, and at the same time why didn't Indonesians understand the problems surrounding them? The proof that foreigners have a better understanding of coral reefs is the fact that they have booklets that includes descriptions of all the underwater flora and fauna whereas in Indonesia our terminology for these sea creatures is quite poor with the exception of dialects found in coastal communities where there is a long time familiarity with the ocean. Even so, this familiarity is disappearing with modernization that pushes people to use up land resources instead of ocean ones. The result is that we are a community blind to the sea.

Culturally we have been long conditioned to forget about the ocean, so that finally the ocean and its resources are an empty niche in our knowledge system. Because of this our vast maritime wealth remains under appreciated by people and industry. The government's interest in coral reefs remains low. For example, coral reefs are used improperly, as building materials. And yet the Department of Public works only recently prohibited the use of coral in building, in 1996.

The result is that coral reef still intact covers about 40,000 km<sup>2</sup> (about 4 million hectares of coral reef). According to Reef Check LIPI, published in 1994, coral reef that was still perfectly intact and functioning was at about 6%, coral that was functioning well was about 23% so what is actually functional is 29%. This means that 70% of our coral reefs are not functioning properly. And according to ocean experts, Indonesia had coral reefs that covered an area of 85,000km<sup>2</sup>. This tragedy is a result of our land-oriented thinking, ignoring the ocean and allowing our coral reefs to be destroyed.

Our coral reefs have been destroyed because of the blindness of our people to the ocean as well as the creation of practices that harm the health of coral reefs, namely:

1. Changes in coastal land use, which often results in sedimentation and beach erosion.
2. Changes in land use which have made coastal areas sensitive to pollution whether from farming, industry, or households.
3. Misuse of coral reefs, for example in its use as a building material; irresponsible fishing practices, such as bombing, poisoning, throwing down anchors, and the trade in coral.

The main consequence of the destruction of coral reefs is the depletion of fish, as coral reefs provide shelter for them. Another result is that we lose natural protection for beach areas as coral reefs act to break down waves. Small islands can then be inundated with water. We also risk losing potential medicines and of course, the natural beauty of coral reefs. Another function of coral reefs is to provide us with oxygen. This function is especially critical when we remember the poor condition of our forests.

According to coral reef experts, the quality of reefs in eastern Indonesia is the highest in the world. There are 80 known types of coral and the number is growing. In the world there are three maritime tourist destinations, namely the Caribbean, the Mediterranean, and the waters of eastern Indonesia. According to these experts, the coral reefs of Indonesia are the most esthetically pleasing. And because we are blind to our ocean, we remain untouched. Indonesia's greatest wealth is its eastern ocean.

From wherever we begin, whether from the east or from the north, the diversity of coral reefs is declining. In the Caribbean there are only 20 species of coral reefs and in the Red Sea only ten. The Caribbean Ocean has only a few species and yet generates income from tourism in the amount of 89 million dollars annually. There are no figures available for Indonesia, as no difference is made between aquatic and general tourism.

When Mr. Soesilo Soedarman was the Minister of Tourism, he invited aquatic tourism experts to make a comparison study of the esthetic value of coral reefs here in Indonesia and elsewhere. The result was that Indonesia held the top six places, followed by the Great Barrier Reef in Australia, the Caribbean, the Maldives and then the Red Sea. The richest dive sites in Indonesia were the waters around the Moluccas and Teluk Cenderawasih in West Papua followed by Padaida, Wakatobi, Banda, Banggai and then Bunaken.

I am happy that a majority of you here today is young because with a singular consistent struggle it will not be impossible to transform our coral reef into our biggest economic asset. The people of the world, especially those in developed countries already miss authentic nature. Eco-tourism has great economic potential. Later if we are successful we can share our good fortune, as economics of coral reefs is the right of the local communities, not the central government.

If our leaders are honest and intelligent perhaps this crisis will end in five years. If however, our leaders are greedy and stupid perhaps we will need twenty years or more. But for sure there will be an end to this. If we are diligent in this struggle, even to the point of exhaustion, we will be repaid in the future because Indonesia's economy will truly be the economy of coral reefs and it

will be a local economy, not a centralized one. What's more is the introduction of regional autonomy.

I once read a report from ADB from 1978 that stated that the potential of our natural ocean resources including offshore oil and gas reached US\$70 billion. And actually fishing is not the biggest source of income except for biotechnology and it generates US\$40 billion, followed by aquatic tourism and lastly, natural gas. So because we are blind to the ocean we are as yet unable to benefit from it. But with our hard work, one day we will reach that goal together with the public.

Finally, I would like to make several suggestions for follow-up actions with respect to Reef Check. First, with this bright picture, I ask that all of you be committed to this effort, because this program loses when people who initially participate slack off in the following days.

Second, enrich your knowledge! There is a lot of literature that can reinforce our confidence and can help us to be proud of this country that plays such a strategic role in maritime knowledge. Don't be hesitant as we can certainly no longer control land resources. There are just too many people.

We will progress to a synergistic interaction between land and ocean resources that we can unify with a strong commitment and I think there is nothing wrong with considering ourselves part of the natural resources of the world. We are now comprehending our poverty and the horrifying state of our resources, the result of our blindness. But since we have become a democratic state the role of ordinary citizens has become important and the role of the government has diminished. A program like this can be called a small step towards the clear future and you all are part of the process. For this I wish you luck.

## **Summary of Discussions National Reef Check Workshop 2001**

**Session 1** : “Reef Check as a Monitoring Network for Indonesia’s Coral Reef  
**Speaker** : Sarwono Kusumaatmadja (Reef Check Senior Advisor)  
**Moderator** : Boyke Lakaseru (WWF Wallacea)

### **Taufik Hizbul Haq (Jari, Lombok)**

I agree with Mr. Ketut Sarjana Putra’s suggestion that this program can be used to standardize the methods used in Reef Check for the last five years so that we have the same indicators. Because the data from LIPI states that our coral reefs cover an area of 40,000km<sup>2</sup>, we need a lot of people to watch the conditions of coral reefs. We analyzed Reef Check methods to find an international standard, to find the weaknesses and their solutions. Coral reef observation has been practiced for a while, yet the number of people we embrace for RC in new areas is still small.

For Mr. Sarwono, I am interested in the information that you brought to the Office of Public Works after the use of coral was prohibited in 1996 and I want to know the regulation number and where is it enforced? I ask this because in Lombok, since COREMAP started its coral reef observation posts in 1993, coral is still being taken.

### **Sarwono Kusumaatmadja**

I believe you can find the answer at Kanwil (Kantor Wilayah or Area Office), but don’t be surprised if they don’t know the answer. Other than that, you can ask at Kantor Ispresewil in Jakarta. However they are blind to the ocean and so they might not know the beach and zoning regulations and port development is not considered an issue for oceans and coastal areas.

### **Ketut Sarjana Putra**

Since our creation of the Reef Check method in 1996, our desire was to provide the world with information. But after several times performing the Reef Check, our weakness is primarily scientific. We need research to understand the existence of bioindicators for Reef Check. However the number of Indonesian researchers is limited so our methods and indications need to be simplified in order that people can become familiar with and monitor our wealth of creatures. This idea was triggered by my experience when diving at Menjangan Island when I saw a foreign diver cut a piece of *Acropora plamata* about 2 cm big. I was afraid that this was an instance of DNA biopiracy because I myself have learned about DNA systems. If our divers understand the aforementioned genus it will become one of the tools to prevent diversity loss in the future. We are probing the possibility of discussing indicators that can be used in our method with TNC and MAC in Washington. If that happens, we will immediately discuss it here in Indonesia as the indicators used for our area will improved.

### **M. Abrar (Minang Bahari, Padang)**

To Mr. Ketut Sarjana Putra, regarding Reef Check methods, I see several weaknesses.

1. The final processing of data is only a general picture, even if it is following guidelines. However, I feel we need to give a quantitative picture, because we can get it with this method. Within the problems of coral reefs, the most important thing for us to do is to provide information about the condition as seen from the amount that

has been covered. Maybe here is the point for hard coral. I suggest that we not only take this present data, but also quantitative data using HC measurements so that we can find how much coral is covered. And so the information we present will be even stronger.

2. Aside from monitoring, it would be useful for Reef Check to continue its actions in information sharing, for example coral reef education or awareness in the community because at this point it is still unclear.

For Mr. Sarwono, I have received information that global warming and El Nino will return. From experience we know that this presents a big threat to the health of coral reefs and will result in the degradation of coral in many places in Indonesia. This state of nature is difficult for us to prevent but information is very important for relevant areas so that we can at least be prepared. I hope that the information from Mr. Sarwono is accessible to us. Also for RC, we can make some kind of information network to let our partners in different areas know.

**Tasrif Kartawijaya (Fisheries Diving Club IPB, Bogor)**

For Mr. Ketut Sarjana Putra, here we are talking about a network for Reef Check. I would like to ask about what kind of coordination would an RC network would use? Our strategy for developing RC Indonesia should empower local communities, so how does what you are proposing fit into this idea?

To Mr. Sarwono, has the government already addressed the issues of the use of bombs and cyanide in fishing? Will the law pursue them?

**Ketut Sudiarta (Warmadewa University, Denpasar)**

We all know that Mr. Sarwono was once the top person at the Department of Oceans and Fisheries. What I would like to ask relates to regional autonomy, if we look at the fact that with regional autonomy, the center no longer has authority over marine resources. I worry because resources at the district level are very weak and the indiscriminate deforestation that has occurred might be repeated in coastal areas. Have you ever enacted a policy to address this problem? And how will we manage our coral reefs as it is multi-functional? And how do we integrate those functions so that we can optimally benefit local districts and coastal people?

**Ketut Sarjana Putra**

I think with the last batch of data it was felt that there were limits with respect to its overall legitimacy. Secondly, in integrating Reef Check data quantitatively: do you mean with respect to colony size from hard coral or the percentage of coverage? For percentages of coverage, that can be answered using hundred meter transects. If our method is expanded to include measuring colonies, the data obtained for analysis will be good. So now we have two things that have emerged, the first is making our Reef Check method for scientists or do we keep it for use by the general public, because the original goal of Reef Check was to involve common people. And this has been debated until now. I feel that details such as this can be discussed later on in the workshop so that we can all come to an agreement.

The second issue regarding continuing action by the Reef Check program, of course we must follow it up with education (and in fact there is a program called Goes to School), and also we must get attention from newspapers and into reports to policy makers, especially as I hope that Reef Check will be adopted as a national program. Later on in this workshop we can further

discuss how to use the information and data from Reef Check and its packaging within an awareness program at each level as it might not be the same nationally as it would be locally.

I will add a bit about global warming. At this point in time we are involved in efforts to address global warming in the WWF Wallacea Coral Campaign. The problem is when bleach corals are used as an indicator we experience in the field that reef sites are more resistant to global warming especially those sites that experience upwelling currents. Sites in these areas are inclined to have shorter recovery periods. Maybe this can be considered as a factor in creating national core zones. If we consider global factors such as this, the way we distribute zones in the future will improve.

From FDC, the shape of the network we propose would probably be an email system, however, I think the details should be discussed later. This workshop is of course to figure this out. Strategies to develop Reef Check on a community basis in the future need to be approached cautiously. If we mean the people who live in coastal communities, these people are very uninformed and uneducated. Maybe one standard we could use would not be based on the ability to dive, but perhaps just being able to snorkel. But the zero level must also be used, as the Reef Check method uses depths of 3 to 10 meters, so that we add 0 meters.

### **Sarwono Kusumaatmadja**

Global warming is a real threat to our coral reefs. So, if the predictions of IPCC are right, our coral reef population will experience a sharp decrease. But this doesn't mean that we should stop Reef Check activities. If our Reef Check activists are good, our reports will become a part of resource accounting. If the data then shows the destruction of coral reef as a result of global warming, we can then present this to industrialized nations as hard proof of global warming. We also need to identify areas that are relatively immune to global warming so that the coral is more strongly protected. I have already said this to Coremap, but it doesn't fit with their terms of work. It isn't easy to fix this as bureaucracy is never straightforward. I feel that Reef Check as organized by WWF has a value different than that of LIPI/Coremap. Reef Check is identifying core zones that later will be protected as much as possible. Waters with good currents such as Banda, Selayar and Nusa Penida aren't experiencing much bleaching. Still we need to be concerned about Teluk Palu, Teluk Tomini, Karimun Java and the like. We must take interdisciplinary action, as we need information from hydrographers.

The Reef Check community, including WWF and others, needs to have a single network that contains the same perceptions and interests so that it can work well together.

Regarding the misuse of coral reefs, bombing is clearly a criminal activity and there have already been arrests and prosecutions. For poisoning there is already a basic regulation in the constitution about the environment as well as regarding biological diversity. The only problem is the hesitation to take action on the part of law enforcement officials. Because of this, it is still difficult to take legal action. Aside from legal enforcement, don't forget that there is a cultural legacy in the form of customary law that needs to be applied in the area of conservation. A new strategy needs to be used that incorporates local communities, not the government.

Literature about oceans and coral reefs is primarily from other countries and has not yet been translated, so there is little that can be distributed to common folk. Just recently, our government asked donor institutions and foreign researchers, as a condition to obtain their permits, to prepare all documents in the Indonesian language. This means information outflow. We cannot compile all of this information in our language in such a short time. However, WWF can create a knowledge bank using an information system that can be accessed by those who

need it. According to a survey, to inform Indonesians about something, television makes the best impression. It would be very helpful to the distribution of information if we could produce a television series about coral reefs and the ocean. Coremap once worked with TVRI and TPI in this same vein. TVRI is now working with the National Geographic Society to create a regular program about the ocean that will be aired on TVRI. The core of the problem of information distribution over a wide area can be solved by a single cost effective information system.

DKP policies about conservation can be found at the General Director of Coasts and Small Islands and for further information you can also contact the conservation section (Director of Conservation Mr. Achmad Abdullah). With respect to regional autonomy, the central government, even with its decreased authority, must raise awareness through public guidelines. Public directives that have already been issued in Jakarta are environmental and community-based management guidelines for small islands. This directive states that all economic activity on small islands must be sustainable and community based; and must have prior informed consent from the local people. This means that projects must be announced and agreed upon by the community before the government will issue any permits. There are also several steps that must be taken by the local community, investors or government if natural resources are to be used on these smaller islands. At DKP itself, we made a breakthrough in creating informed consent public directives, so that the process became more protracted. The next public directive that will be your work will be ocean zoning and small island clusters as we cannot wait for a governmental decree to create coastal zoning. And if public directives are already agreed upon those will influence the law.

For dealing with bombing and poisoning, we can contact the Director General of Ocean and Fish Resource Management. And for problems relating to conservation and zoning contact the Director General of Coastlines and Small Islands. With regional autonomy the central government must retain its strategic authority and must win the perception war. But if regional autonomy only strengthens a local government, I am sure that later the local governments will only imitate Jakarta. Therefore we must build the capacity of both local communities and their governments so that there are no “little Jakartas.”

Therefore I ask for a strengthening of the alliance between the central government and non-governmental organizations. Don't forget that we have a new political elite who is almost all blind to the ocean and there is the possibility for institutional tinkering or even eradication. DKP's objective, what I said to friends there, was to go directly to community-based action using NGO's. If it so happens that DKP disappears (from the cabinet), we will still have a strong community and a group of detectives for the coral reefs. We are already in an era where we no longer depend on the government.

### **Sabdimatian Nasution (Yayasan Bunga Bangsa, Riau)**

I would like to ask Mr. Sarwono about the mining of beach sand. This activity has a big impact on coral reefs. In Riau, in one regency there are 162 companies that are mining beach sand. How very large a contribution towards the destruction of coral reefs! Wouldn't it be a good idea to stop sand mining in order to conserve coral reefs? If it must be continued, what concept can we use in order to minimize the effect this has? Because this could be of use in opinion building.

### **Rio Bertoni (Mitra Bentala, Lampung)**

I would like to ask Mr. Sarwono,

1. Regarding role sharing in resolving conflicts/ coastal and ocean issues, there are problems not just with coral reefs. There are also mangroves, sea grass beds and other ecosystems that are all very complex. I see an overlapping of solutions to these problems between various offices of the government, remembering that role sharing is very important to resolving these conflicts.
2. Regarding regional autonomy, you said that this is not such a big problem because in the future it will have already passed. But in Lampung this has turned into a serious problem as it is tied to the ecosystem and the exploitation of coastal and ocean resources being carried out by the PAD (Pendapatan Asli Daerah, or Local Area Income) in each regency.
3. The problem of strengthening local communities. In the timeframe of the last several years some resistance has developed on the part of the community towards the big fisheries, who claim that their fishing areas are being destroyed by trawlers, and there are many victims. If communities are strengthened, will this kind of thing continue? "Community victimization" has become a serious problem for NGO's

### **Sarwono Kusumaatmadja**

The problem of beach sand mining in Riau: in the past authority was held by the central government and now with regional autonomy the local government has been inundated. With the economic crisis this authority has become crisscrossed so that government agencies with no authority are issuing permits. On the other side of this, the government is too weak to supervise its own employees. This could be eliminated by a good permit system as issuing permits always follows conditions. If the conditions are not met, the permits would be revoked. However, the problem of sand mining in Riau is not a matter of permits. It has to do with non-budgetary funds controlled by certain government employees so that those are who are taking the sand are difficult to control because there are too many involved.

Actually all these problems are part of a temporary process and will end when there is a strong community and real control on the part of the local government. However this process won't be short, perhaps it will last for twenty years, so we have to be ready to struggle! To become an NGO activist these days takes a lot of money. During the New Order, to be a reliable NGO took courage to stand up to the government whereas now it takes skill and ability that can be acknowledged by both the government and the people. Also, people involved in NGO's need skills in conflict resolution as no matter what kind of work is being done, there are sure to be conflicts, including in Reef Check. Our country is experiencing a transformation and the old world won't just give up, it will mobilize big fisheries, large companies, political parties, the parliament and the military as well. The big battle will be won with perseverance, consistency, political ability, knowledge and so on.

### **Moderator:**

I won't present a conclusion, but there are several important points I want to share:

1. If we are talking about Reef Check, one common vision is that we want to involve all layers of society so that together we become coral reef watchers. What Mr. Sarwono has said is very interesting, that if we speak of Reef Check it is not only divers involved but also the many layers of the community that will benefit the capacity of every Reef Checker.



2. When talking about a network, there is a challenge to unifying our perceptions and interests. The existence of a network is not separate from a movement and also needs to pay close attention to civil society, which is a part of democratization.

Friends, this is a big problem ahead that we must solve together, whether it is WWF Wallacea as the initiator, Reef Check groups or people outside of the Reef Check program. Therefore I hope this program will expand its activities in the future. That is what I would like to say. Again I would like to thank both Mr. Sarwono and Mr. Ketut Sarjana Putra, as well as our participating partners. Thank you and good afternoon.

**Session 2 : “Reef Check Center”**  
**Speaker : Naneng Setiasih**  
**Moderator : Putro Santoso Kurniawan**

**Naneng Setiasih**

Reef Check is an ongoing program with the goal of raising public awareness. One of the targets we hope to reach in Reef Check is in education, so that common people have some basic knowledge of coral reefs. In the long term, Reef Check education will reach elementary school children as a long-term investment.

Aside from education, objectives for Reef Check include an expansion of both the Reef Check areas and the number of volunteers. Area size will influence the validity of data and for this we will need more participants to cover it. There is an obvious connection between the two.

To implement the Reef Check program, we are not working alone, and Reef Check data is obtained with cooperation from several other organizations (NGO's, LIPI, Academics, Practitioners, and others)

**Taufik Hizbul Haq**

Methods used don't need to be problematized.

**Naneng Setiasih**

RC methods have already been standardized to an international model so that all over the world data is uniform and scientific. And this method is continually revised, for example maybe there is a need to review indicators, and say that the kepe-kepe fish indicates coral in good condition, but it might also indicate coral in less than good condition.

**Discussion**

Question:

WWF is the national data center. Can it be made into the coordinator for various areas?

**Rio Berton (Yayasan Mitra Bentala)**

What were the original targets of Reef Check, remembering that this program has been going for five years?

Are there large areas being monitored, or under the supervision of locals, or many participants? This is important to know because it will influence the commission we set up later and will also influence an agreed-upon method.

**Sigid (MDC UNDIP)**

Where is the Reef Check program going in the future? Will it involve environmental education? Who will be targeted for education, divers or the general public?

**Naneng Setiasih**

The development of a network depends on all of us. For example, if in Lampung there are 100 organizations all performing routine reef checks, then perhaps there will be a need for a special Lampung coordinator. On the other hand, if in Irian, Maluccas, Sulawesi there is only one Reef Check program, even though Lampung is a smaller area, it should have its own coordinator while in the eastern areas, Irian, Maluccas and Sulawesi a single coordinator would

suffice for the entire area. Of course we would not close off the possibility of setting up a coordinator for an area that is large enough with a strong enough network as the mechanisms and technical aspects ensure this and it would only make our larger network stronger. The problem is how we can coordinate this network to avoid exclusivity between areas remembering that we are all one big family in Reef Check Indonesia.

As for education targets, primarily we want to work with people who don't know very much about coral reefs. We want to broaden their understanding, introduce them to coral reefs, beginning with reef functions until we can lessen the pressure on coral reefs. More specifically is our first target is children. Like people say, long-term investment in children is investment for us all.

To Mr. Rio, there are three things we want to develop: the availability of coral accurately representative reef data, more volunteers, and awareness.

### **Taufik Hizbul Haq**

Are there efforts to change the current method because of its many weaknesses and the difficulty for ordinary people to understand? If it part of the third target, we will be confused about deciding what method we will use.

### **Naneng Setiasih**

The Reef Check method has already been standardized to an international model. If we feel there are weaknesses in this method, we won't find a new method but will revise the one in use.

We need the involvement of many people at Reef Check, because we want to raise awareness.

### **Moderator**

RC Indonesia isn't closed to suggestions from participants that can be further discussed in the workshop.

**Session 3 : Reef Check Presentation for Area 1**  
**Speaker : Muhammad Abrar (Minang Bahari Foundation, Padang)**  
**: Wahyu Sigid (Marine Diving Club UNDIP, Semarang)**  
**Moderator : Mulyadi Djamil (Lumba-Lumba Dive Centre)**

The first presentation of Reef Check for Area 1 was by Muhummad Abrar (Minang Bahari Foundation). He presented a working paper on Reef Check Indonesia for West Sumatra Province (see appendix). He was followed by Wahyu Sigid who showed a video about the conditions of coral reefs in Karimunjawa, Central Java, the home of the UNDIP Marine Diving Club, which performs the Reef Check there.

**Antasari (Berau Fishery Office)**

I am interested in the presentation from Karimunjawa, Central Java regarding efforts in education activities at all levels of the community, especially for students. I strongly agree if it can be done and I would like to know how we could insert some kind of locally relevant content into area education, starting with primary school up to the university level. And where do we put the local content with respect to coral reefs in primary schools up through universities?

**Wahyu Sigid:**

The insertion of materials about coral reefs as locally relevant content is still being debated. MDC itself is actually a part of UKM (Student Activity Unit) and so we are rather limited. We are working together with an NGO that has more legal strength to make local content about coral reefs more concrete. Technically, we will lobby the local government of Jepara and the National Education Office there to present our ideas regarding the importance of coral reefs for school-age children.

**M. Abrar:**

In our presentation we deliberately showed comparative data so that there was a picture of the condition of coral reefs at various time intervals until the last data, from Reef Check 2000. There were of course variations in the methods, even while the principles were the same, where the data before Reef Check used the line transect method employed by LIPI. The Reef Check method at its base is the same as line transect but because it is hoped that many people will use this method it has been simplified whereas the LIPI method is more complicated and detailed for use by the ordinary person.

With respect to the data of percent cover that was compared. We in Padang tried to convert the Reef Check data so that we could get a coverage percentage. This meant that in taking raw data, for example, of hard coral, not only the value of points but also the diameter from this hard coral was noted, so that later values would emerge about the percent cover of a certain area. We can say that the method we used was a bit different but I feel that with this approach the data is still acceptable. I also need input from people here-was this method used or was the opposite method used?

Regarding the glaring changes in the conditions of coral reef, the data we obtained from 1996 to 1998 can be said to be in a condition of ecological climax. This means that the coral population has already reached a stable condition.

**Tasrif Kartawijaya (FDC IPB)**

How to recruit volunteers from the government and the coast guard to participate in Reef Check?

**M. Abrar**

We had several programs before there was Reef Check, for example with the dive training of different parties (local government, the community, and the Coast Guard). Because we were active in Pengda POSSI (Indonesian Sub-aquatic Sports Association), we could involve friends from various agencies to join Reef Check because basically we need formal registration for our volunteers.

**Rio Bertoni**

Keeping with the issue of education, we need input from our friends first from the Marine Diving Club at UNDIP and Minang Bahari about steps we can for continued action in the Reef Check Program. We all have already hosted competitions to create environmental education modules for teachers in primary schools up to secondary schools and we already have several priority modules that we will bring the Education Office in an effort to insert locally relevant content.

**M. Abrar**

I feel the input from Reef Check data itself is good enough to ensure continued action. Reef Check is a good way to distribute information about the condition of coral reefs based on its own data. In the area of information distribution it's good if we make activities to raise community concern and awareness about coral reefs so that people understand and love coral. If MDC makes the effort to put local content into school curriculums, our other efforts in promoting community awareness about coral reefs can be varied. As Mr. Sarwono said before, perhaps the most effective media is TV or radio and making a documentary film about coral reefs. Other activities to raise awareness include hosting drawing contests, printing brochures, etc.

**Moderator**

Reef Check is one way for all of us to have more opportunities to save Indonesia's coral reefs. We can each take this back home to our respective areas and create RC activities such as were taught during yesterday's Training of Trainers and also what was gained from today's workshop.

**Session 4 : Reef Check Presentation of Area II**  
**Speaker : Taufik Hizbul Haq (Jari Foundation, Mataram)**  
**:Toufik Alansar (Marine Science Diving Club UNHAS, Makassar)**  
**:Antasari (Berau Fishery Office, East Kalimantan)**  
**: Made Iwan Dewantara (WWF Wallacea)**  
**Moderator : Steven Ch. Kaunang (MAPALA Zooxanthellae UNSRAT, Manado)**

The activities of this session began with a Reef Check presentation on Nusa Tenggara, followed by South Sulawesi, East Kalimantan, and Bali.

### **Taufik Hizbul Haq**

(Taufik spoke of Reef Check activities in Nusa Tenggara during 2000. )

JARI performed Reef Checks in two provinces, West Nusa Tenggara and East Nusa Tenggara. The first location was to the east of Lombok Island, in a relatively undeveloped area even though the government has designated it as a developing aquatic tourism area. We would like to prevent this island from becoming like the three Gilis where the coral has been totally destroyed as a result of improper tourism management. Two islands surveyed (Gili Sulat and Gili Lawang) are unoccupied and have a fairly diverse mangrove ecosystem, sea grass beds and also some unique coral found in the center of the island. Problems have arisen from destructive fishing (bombing and the use of potash) mostly on the part of outside fishermen. The condition of living coral surveyed is generally at a rotation of 20-30% with the remainder being broken coral. The majority of people there are farmers and do not care about problems with the ocean. Because monitoring is at a minimum, fish bombing occurs almost daily.

From the awareness side, we invited several schools to do a beach clean up. If there are others who would like to do this, we will help with necessary preparations and materials.

The second location where we performed a Reef Check was in the area of Sumbawa, at Moyo Island, which is a high-end tourist destination. In fact, former president Bill Clinton was there last month. There is one hotel that is supposedly developing eco-tourism but it does not involve the local community. Because this site is relatively well known, we used it to take Reef Check data for the island. The results were that the coral in this area is in relatively good condition. Next we collected data on the condition of coral at Satonda Island. This small island is unique in that there is a beautiful lake in the middle and there are no permanent residents. It became the source of conflict between two regencies there, the Regencies of Bima and Dompu. This location was protected and there is a KSDA post that keeps watch. However it fell into the hands of a third party as it was contracted to a hotel to manage the island. When the owner of the island, a Laksamana, was still alive, the protection for this island was tight. Since he passed away, fish bombing has flared up again.

The third location for Reef Check was at Labuan Bajo, outside the National Park (the map of Labuan Bajo was adopted by a TNC pamphlet). Reef Check awareness activities were performed in three locations so that volunteers could learn some things about coral reefs. Big Seboloh Island and Little Seboloh are rather small and are not far from the Komodo Island National Park. Whether from TNC or the National Park, monitoring activities are routinely carried out, however, destructive fishing practices still take place.

### **Toufik Alansar**

The materials from this presentation are in the appendix.

## **Antasari**

Berau Regency is in the northern part of East Kalimantan in an area where there are coral reef ecosystems that rival those found at Bunaken. Because information about coral in Derawan is still limited, this area is not well known.

Sangkalaki island is inundated with highest population of green turtles in Indonesia. Currently there is a struggle to designate this island as a conservation area and at the present time the Berau local government harvests turtle eggs as a resource for PAD (Local Area Income). Aside from this the marine resources are abundant enough to attract fisherman from areas outside of East Kalimantan to benefit from these resources but this has resulted in destructive fishing.

The results of the Reef Check show the coral condition to be moderate. Some of our efforts have included education so that coral will be well managed. Further, we hope that the local community will show initiative in monitoring coral reefs.

Aside from this, with regard to regional autonomy, we are currently involved in efforts to return to customary law and are lobbying villages and community leaders as well as the government to enact it.

Obstacles that we have faced include the lack of human resources, infrastructure and tools which all limit our ability to move. We also have a funding problem. We hope we can get support from WWF. Thank you for your attention.

## **Made Iwan Dewantama (WWF Wallacea)**

Previous speakers have raised several issues, whether about techniques, obstacles or suggestions. I have a bit of input for performing Reef Checks and I hope it will be of some benefit for those who participate in monitoring activities. Reef Check in Bali is blessed by the cooperation of many dive operators here. The reason is that Reef Check is successful is that it involves different groups. Aside from that, dive operators depend on the existence of coral reefs. The logic is that they must do the most to preserve the coral reefs. We are able to overcome one obstacle that often arises, the lack of dive equipment.

Generally speaking, there are eight locations where there is a lot of exposure: Menjangan Island, Pumuteran, Tulamben, Padang Bai, Amed, Sanur, Tanjung Benoa, Nusa Penida and Nusa Lembongan with a total of 33 dive sites. Those that are monitored using the Reef Check method number 14 dive sites.

From those sites, there are several that have been routinely checked since 1987. They are Menjangan, Amed and Nusa Penida. We can see spot any trends that occur at those locations.

How do we work together with dive operators so that this continues? We make an agreement with the dive operators in our coral conservation efforts, not just for doing Reef Checks. We place moorings, do underwater clean up, etc.. These efforts we have termed “Friends of the Reef” and within that is a code of conduct agreed upon together. From this we get a real commitment from the dive operators in efforts to make coral reef conservation successful.

## **Ivan K. Silaban (Lestari Marine Science Team)**

I am interested in the island mentioned by Mr. Boen (Taufik Hizbul Haq), where there is a coral reef ecosystem, lamun grass and mangrove. Structurally, the ecology of this island is very rich and if I am not mistaken that area would be in the path of sperm whale migration, even if

there was fish bombing there. I would like to ask if JARI Foundation or the local government is aware of this? And is this island part of the National Park so that it is protected?

Regarding the messy way of catching fish, in Riau this is not a new thing. In addition there are foreign trawlers that fish as close as 1-2 miles from the shoreline, even though this is illegal.

We once tried to illuminate the fisherman about destructive fishing and we found out that those who use bombs and cyanide to fish are aware that it is damaging. Their excuse is that if they don't use these methods, their catches will be minimal. We need suggestions from our friends here about alternative methods that we can pass on to them so they will stop these practices.

### **Taufik Hizbul Haq**

The fact is that the two islands where we performed Reef Checks are threatened by destructive fishing. When JICA worked together with the Department of Forestry to survey the mangroves of this area, they collected data about the various types of mangrove and also built a jetty. The community uses this jetty to cut down mangrove trees. The mangrove bark is used to color string and woven fabrics and the sad thing is that while it is economically beneficial, it is not environmentally friendly, and many trees are killed.

There is only one species of blue whale seen there and this whale is traditionally hunted each year in the area of Lembata, Flores. An ecology expert has said that this poses no problem as this group hunts in the traditional way. If you want to find out more about whales, you can contact TNC.

What JARI did with respect to these islands was to lobby the local government so that these islands became conservation areas that could still be used by the local community in a sustainable and optimal way.

The problem for fisherman from West Nusa Tenggara is that they are very sensitive about the fact that much of their fishing grounds have been deemed off limits in order to promote the pearl industry.

An extraordinary thing happened at one of the islands that practiced fish bombing. Independently, they managed to cultivate mouse grouper without the assistance of a scientist, etc. The unique thing is that mouse grouper eggs are caught by the children of the fishermen and are raised in baskets with a minimal cultivation time.

### **Rio Bertoni**

In Lampung, according to observations with a manta tow, there is coral reef being destroyed because it is covered with mud. According to the people there, this place used to be a mangrove forest. Has this happened in all places in Indonesia? The problem is that the Department of Ocean Protection in both Lombok and Lampung are based on industry. There is an example of another DOP that is community based. The local DOP in Lampung has almost 1000 hectares of being used for pearl cultivation.

### **Made Iwan Dewantama**

To answer your question: coastal ecosystems are very interdependent and complex. Humans are creatures that have always used whatever is closest to them, and so changes in the mangrove has resulted in the destruction of coral reefs. Departing from our concern for coral reefs, we can also initiate activities tied to other ecosystems, for example sea grass beds and



mangroves. As an example there is marine education for children that doesn't just present theory but also brings the children to the field to see what is really there.

**Taufik Hizbul Haq**

Sea grass beds are a forgotten ecosystem because there are not a lot of experts and the ecosystem itself can be said to be boring, even though sea grass influences both mangroves and coral reefs, as it grows among them both.

**Rio Bertoni**

I would like to discuss the DPL (Protected Ocean Area) in Lombok that is almost the same as in Lampung, being based on the pearl industry. Is there a DPL model that is community based, because this pertains to community rights issues? Where does the community have access to fish if there are pearl companies controlling the waters?

**Taufik Hizbul Haq**

JARI focuses its program on community-based eco-tourism. If we look at the development of these activities they actually destroy the coast on one hand but on the other if a company allows fishing in its area, it worries about the pearls being stolen. I think we need a mediator who can facilitate a dialogue between the community, the government and the companies.

**Session 5 : Presentation on Reef Check's Database Management**  
**Speaker : Anton Wijonarno (WWF Wallacea)**

One key to success that we need in coral reef management is a high level of long term commitment from stakeholders so that we obtain time series data about coral reef, which can then be used to decide about management action. In this discourse, the Reef Check program is beneficial because it is meant to raise concern in all the stakeholders and it also presents data and field information suitable for management goals. It is also easily accessible to the public. As the Reef Check method is still global and specific in nature, data and information is a reference point for more detailed research about the conditions of coral reefs.

The format used for data entry by Reef Check International is easy to understand because users simply need to fill in data and the values will be directly computed, such as the total, average value, and standard deviation. This data entry is divided into three files: 1. Site description; 2. Substrate Point Sampling; and 3. Indicator and Fish Belt Transect. All use Microsoft excel (\*.xls).

If this is used over the long term and if the data collected is abundant it will be difficult to manage the database only with Microsoft Excel. Another application used to control databases is Microsoft Access.

This presentation is more about the technical use and management of the data forms that have already been made from Reef Check's data input. As the National Program Coordinator for Reef Check Indonesia, WWF has already compiled the Reef Check database started in 1999. The results are as follows:

1. Results of Reef Check 1999

From 8 locations and 33 sites in Indonesia, Reef Check Indonesia reported that only 5.56% of the locations had coral reefs in good condition, 47.22% locations in a moderate condition and 47.22% in bad condition. Signs of growth were relatively good at a depth of three meters, compared with 10 meters. Fish indicators such as butterfly fish, triggerfish, angelfish and clown fish have been visibly overexploited, grouper is rarely found and if there is a small measurement, the Napoleon Wrasse fish was only spotted in two locations, in Bali and Makassar.

2. Results from Reef Check 2000

From 11 locations and 40 sites in Indonesia, Reef Check Indonesia 2000 reported that at a depth of 3 m: 17.5% (7 sites) are in bad condition, 65% (26 sites) are in moderate condition and 17.5% (7 sites) are in good condition. Fish indicators such as Barramundi Cod are rarely seen, and this fish was only seen in Karimun, Java. The abundance of butterfly fish in all Reef Check locations was approximately 20 ind/1000m<sup>2</sup>. Indicators were found in the waters of Karimun, Java with a value for sea urchins at 117 ind/400m<sup>2</sup>.

## Commission Meeting Summary

### **Commission 1 :Reef Check Indonesia Network**

#### Commission Members:

Therisia GS (Octopus Dive)  
Rio Bertoni (Mitra Bentala Foundation)  
Antasari (Berau Fishery Office)  
Mulyadi Djamil (Lumba-Lumba Dive Club)  
Putro S. Kurniawan (Palung)  
Naneng Setiasih (WWF Wallacea)  
Iwan Dewantama (WWF Wallacea)  
M. Iqbal Miladisa (UGM Dive Unit)  
Jakaria (BTN Seribu Islands)  
Toufik Alansar (MS Dive Club UNHAS)  
Ruhama Reza (BTN West Bali)  
I Made Murya (Dinpar Bali)  
Ivan K. Siliban (Lestari Team MS)  
Steven Ch. Kaunang (MAPALA Zooxznthellae UNSRAT)

#### Commission 1 Meeting Results:

##### Reef Check participating regions:

1. Sumatra: Aceh, West Sumatra, Riau, Lampung
2. Java: Jakarta, West Java, Central Java, East Java, Yogyakarta
3. Bali
4. West Nusa Tenggara: Lombok, Sumbawa
5. East Nusa Tenggara: Kupang
6. Kalimantan: East Kalimantan
7. Sulawesi: South Sulawesi, North Sulawesi
8. Papua: Manokwari

There is a need for single coordinators in each area to facilitate effective organization of the Reef Check Program as each area has different characteristics and problems.

Training of Trainers is best carried out in each area and should be organized by an area/regional coordinator so that implementation is more effective and efficient and can involve more stakeholders.

Communication between WWF, as the national coordinator and contact for RC International, with each region should be developed.

In the creation of a strong network, outcomes must be kept in mind. If the capacity of the network to function is strong, the need for subsidies will decrease, there will be a good mechanism for obtaining data, and funding will be independently sought.

The existence of regional coordinators is important because:

- Problems faced by Reef Check are different in each area
- It is hoped that RC will become independent, and the implementation of the program will reflect the needs/conditions of each area

- Planning of RC follow-up programs should be based on an area's condition, not just for the collection of data.
- There is a need for capacity building for those involved with coral reef activities

To achieve this, regional coordinators' functions will be to:

- Create a regional Reef Check center with a database and information about the area's coral reefs
- Act as an institution that interprets data and information collected in the region
- Advocate
- Facilitate communication between Reef Check operators in the various areas of the region
- Maintain contact with other regional coordinators as well as the national coordinator

Conditions for becoming a regional coordinator:

- Must be a Reef Checker, must have both Reef Checker trainer and trainee experience, as well as must have background in science to assist with the collection and interpretation of data
- Must be a diver
- Must have the facilities

Recommendations from Commission 1 Plenary Session:

1. There is a need for an officially declared network. While developing Reef Check, it is also recommended to create the position of regional coordinator as this is important for the long term functioning of RC in addressing problems of individual areas
2. Reef Check's capacity should be raised from this point forward in the short term for 2001-2002 in each area.
3. For the long term, efforts should be made to find coordinators for the different regions.

## **Commission 2 : Fundraising**

### **Commission Members :**

Wahyu Sigid (MDC UNDIP)  
Jendi SW (Octopus Dive)  
Andy A. Guyana (Octopus Dive)  
Yudistira W (Dive Unit UNPAR)  
Yenny Gunawan (Dive Unit UNPAR)  
Putu Mahatrisna (Dive Division ITS)  
Imam Syafi'I (FPIK UNMUL)  
Dewi Satriani (WWF Wallacea)  
Adriani (FDC IPB)  
Rifki Zimah (Trisakti Dive Club)  
Kartika Ch.Sumolang (MAPALA ZoozanthellaeUNSRAT)

### **Commission 2 meeting results:**

#### **Problem summary:**

1. Difficulties for “regional coordinators” to obtain funding to implement Reef Check activities
2. Funding strategies are needed so that Reef Check can implement activities other than diving.
3. Benefits to various parties include participation.
4. Various forms of cooperation with different stakeholders.
5. Harmonization of fundraising strategies.

#### **Benefits for volunteers and sponsors of Reef Check**

1. Media (efforts to gain free support from the media): national and international publicity.
2. Advertisements in the mass media
3. Additions to Reef Checkers' knowledge
4. Reef Checkers and their sponsors are part of a national and international network
5. Reef Checkers and sponsors obtain data that is publicized using popular language with names of volunteers and sponsors included
6. “Green” image for volunteers (includes certificate)
7. “Marketing” value for dive operators. Reef Check can be a part of dive training so that new divers can also learn to do Reef Check
8. Reef Check is scientific but not difficult to perform so that it can involve many people and the data obtained is reliable.

#### **Tools/media that can be used to “sell” Reef Check:**

1. Publicity through mass media: advertisements, press conferences (data), articles (data)
2. Information distribution: booklets, posters, presentations
3. Merchandise: Stickers, buttons, shirts, hats, etc.
4. Network: bulletins, internet site, mailing list
5. PROPOSAL

6. Long term: Creating a single RC National account (need a system)

In efforts to implement Reef Check we must have tools for our audience, to find funding, to borrow facilities and at the very least to develop awareness of the importance of coral reef conservation to two target types, namely:

1. Target audience (for donors and volunteers)
  - a. Environmental NGO's
  - b. Formal and non-formal education institutions
  - c. Participants of drawing/coloring contests (for children and adults)
  - d. Government agencies
2. Target sponsors
  - a. Dive shops/Outdoor gear shops
  - b. Kodak/ Fuji, photo shops
  - c. Transportation companies
  - d. Tourist resorts
  - e. Health drink companies
  - f. Oil/ Shipping companies
  - g. Telecommunication
  - h. Mass Media

Necessary steps for fundraising:

1. Socialization of Reef Check to targets, whether volunteers or sponsors (using mass media and presentations to audiences). Subjects that will be socialized include the current developments in the Reef Check program (data collected, voluntary participation, awareness campaigns, etc.) and, most importantly, the benefits of participating in Reef Check. The objective is to obtain funding and involve as many volunteers as possible to implement the Reef Check program.
2. Prepare proposal and other tools, such as publicity, brochures, etc.

Summary of Commission 2 Meeting

- A. The mechanism for funding from RC International will be administered after sending a proposal about implementation of Reef Check in Indonesia. If for instance our target is to include 35 areas but the funds are available only for 30, we will maintain our target of 35 areas. If this happens, we will work to find a way to distribute the funds to all participants.
- B. To assure that suitable areas are receiving funding, and because Reef Check is still relatively new, all decisions about funding for Reef Check programs will be decided by the national coordinator (WWF Wallacea)
- C. The stronger our network of Reef Checkers, the less need for funding from Reef Check International.
- D. Over time, our funding from RC International will decrease.

Because of the aforementioned conditions, Reef Check must strive to become independent, even though there are many obstacles to doing so. If we can achieve this independence, Indonesia will be the foremost country implementing Reef Check.

At this time, WWF Wallacea plays a role in communicating with Reef Check International but once local area Reef Checks are already in operation they will be able to find funding themselves and will no longer need to display the WWF logo. In other words, once independence is achieved, Reef Check will be “adopted” by all involved.

Displaying the WWF logo in the context of Reef Check activities has a positive impact as WWF is well known and it also avoids the negative connotation of Reef Check being considered a “big money project”. Basically, WWF is not that concerned about the display of its logo. We are more concerned that activities are ongoing and in assistance for funding. If there is one region where fundraising is more successful and another region where fundraising is difficult, our function as national coordinator is to balance the capacity in both information and subsidies. This the function of a network, and if there are problems we will work on them together, as well as remain open to other efforts.

It must be stressed that Reef Check as a program is important to us all, and the basis for doing it is not to find money. Reef Check is not just about collecting data either, but takes seriously the important task of raising community awareness, which cannot be done simply by holding drawing contests.

Recommendations of Commission 2 Plenary session:

1. We must implement socialization together and in each area.
2. The existence of a network will add to both the strength of our data and our funding. It will also help us to achieve independence.
3. All parties involved in Reef Check activities must show strong commitment in order to ensure Reef Check’s success in Indonesia.

### **Commission 3 :Reef Check Data Tabulation**

#### **Commission Members:**

Taufik Hizbul Haq (Jari)  
Ketut Sudiarta (Oceanic Faculty UNWAR)  
M. Abrar (Minang Bahari)  
Jotham SR. Ninef (UNDANA)  
Mimi Natlia (Terangi)  
Sabdimation Nasutian (Bunga Bangsa)  
Tasrif Kartawijaya (FDC IPB)  
Windy Prayogo (Bahtera Nusantara)  
Anton Wilonarno (WWF Wallacea)  
Stephen Effendi (Dive Unit UNPAR)  
Yeria Rambung (FPIK UNMUL)  
Apen Sukmawijaya (BTN Teluk Cenderawasih)

#### **Commission Meeting Results:**

##### **1. Reef Check Methods**

Methods used in Reef Check at this time are still appropriate, remembering that one of the goals of Reef Check is to raise public awareness, especially for “non-scientists”. The current methods are easy to understand. Once Reef Check is established and awareness is already high, then the methods used in Reef Check can be reconsidered. It has been suggested that those already experienced with Reef Check should intensify their activities.

##### **2. Data Presentation**

A data entry form has already been created by WWF. Development techniques will be implemented once data has been collected. Formats are available in compact disc form and will be distributed to all parties organizing Reef Checks.

##### **3. Data Processing**

Data processing will be shared. Raw data will be processed in each area and then will be collected by the national coordinator.

##### **4. Socialization of data**

- Collected data will then be socialized so that it is easily accessible to interested parties.
- In data distribution:
  - the government will be presented with this data
  - the government will be able to work with NGO's in data collection
  - links will be made to connect area data with the national center
  - one obstacle is lack of internet access for several areas

##### **5. Organization of data collection**

- See results from Commission 1 discussion regarding Indonesia's Reef Check Network with respect to responsibility at the provincial level.
- WWF Wallacea will be entrusted to be the center for data collection.
- In the long term, a special site for Reef Check Indonesia will be created.



6. Data revision

Revision of data will be done every year as part of RC's activities

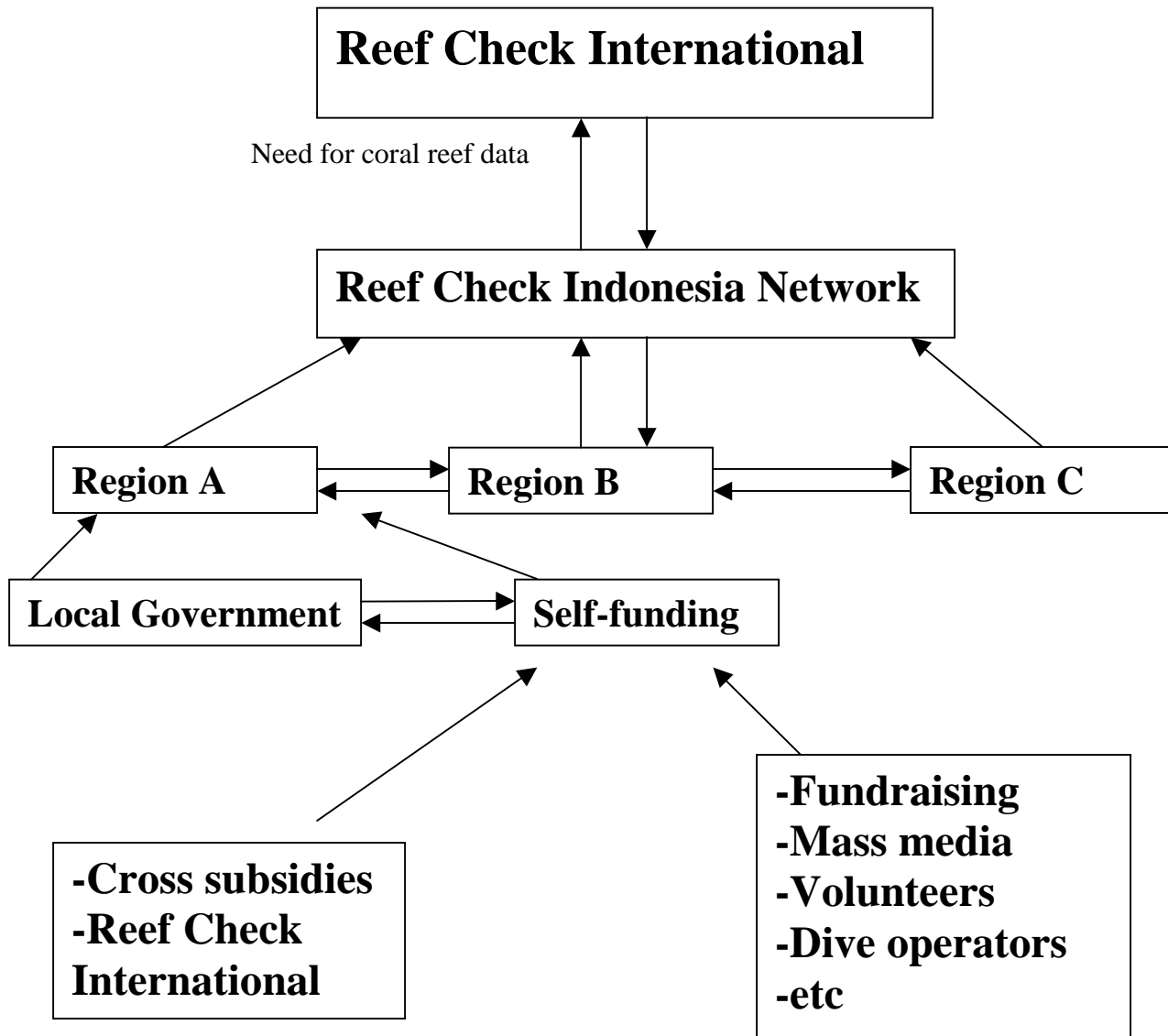
Commission 3 Plenary session recommendations:

1. Data collection in the field for Reef Check should involve a scientist
2. Methods for data collection have already been clarified by Anton (WWF Wallacea). With respect to the distribution of data, we must cultivate strong communications between stakeholders and partners in other regions.
3. It is hoped that partners in other areas will improve data collection, and for this there is a need for professionalization of data collection.
4. One problem that has emerged is how to present data that is up-to-date, especially if a coral reef area is large, and the RC operation is relatively small.
5. Regarding the distribution of data, for the meantime WWF will be used as the database center and will distribute data. After we develop, we can create a website for Reef Check Indonesia that will be directly accessible as well as interactive.
6. For the meantime, the Reef Check International site is accessible and can be used and it is beneficial if activities and data collected in Indonesia are posted there.
7. In Indonesia there are still obstacles to total interactivity, mainly in areas that do not have access to the internet.

## CONCLUSIONS

### REEF CHECK INDONESIA WORKSHOP 2001

1. Need for Reef Check network to be declared by all Reef Check Indonesia 2001 participants.



2. Development of Reef Check activities for 2001-2002 in each area for participants of the National Reef Check Workshop 2001
3. Creation of regional Reef Check coordinators in Reef Check locations in Indonesia (Sumatra, Java, Bali, Nusa Tenggara, Kalimantan, Sulawesi and Papua).

## Appendix A: Photos and Press Clippings from Reef Check Indonesia 2001

# Campaign pulls in the public to save endangered coral reefs



Jakarta Post, June 21, 2001

DENPASAR, Bali (JP) It was not a usual Saturday night rock and roll concert, although the venue was none other than the spacious Center Stage of Hard Rock Beach Hotel in Kuta.

It was different in the first place because it was free. No wonder the concert venue last Saturday was packed with people from all walks of life.

A successful young entrepreneur, dressed sharply in designer clothes, sat comfortably in the corner, having a good time, sipping an expensive liquor from his small glass. A young, later, turned out to be a well-known activist, a rugged knapsack on his back, dressed in worn-out jeans, leaned against the wall, his right hand holding a small bottle of Indonesia's most popular beer. The concert had pushed down the segregation walls of social class.

Second, it was a concert with

Coral on sale for as little as Rp 2,500 a piece in a Central Jakarta suburb is destined for aquariums and garden displays.

By I Wayan Juniortho

a mission. The focus of the night, grabbing everybody's attention, of course, Nage, was not singing songs about the endlessly exploited subject of teen first love, but about a different kind of love, the platonic love between Man and Mother Nature. He sang about the beautiful beaches, serene mountains and the majestic colors of coral reefs. Sometimes he closed his eyes, faced upwards in gestures of reverence and awe. He wasn't faking it; he did really love his Mother Nature.

To make the circle perfect, Inly Barandi, the well-known entertainment promoter, kept the audience interested with her charm, jokes and her raise-your-environmental-awareness messages.

There wasn't any doubt that the audience was entertained; they applauded, they cheered, no brows exploded during the concert and, as it ended, they looked happier than when they arrived at the venue.

But, did the concert really raise their environmental awareness to a higher plane?

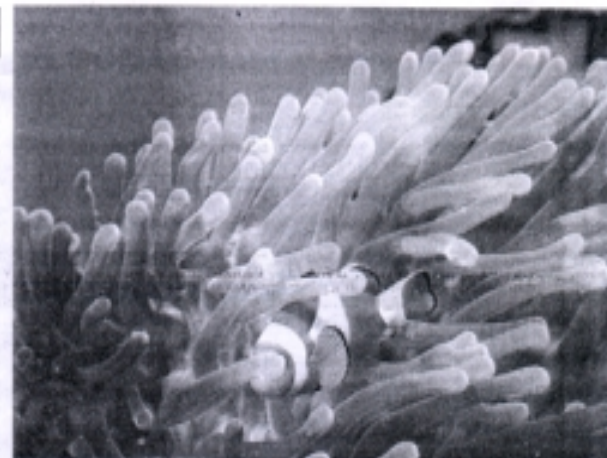
"Well, we couldn't convert everybody even if we wanted to do that, could we? But, the main point of this concert was to present the idea of conserving nature to a wider audience.

Hopefully, it will attract their attention to learn more, or, God willing, to do more," Friends of the Reef (FOR) program coordinator Dewi Setriani said.

The concert was the highlight of various events held under the umbrella of the Friends of the Reef, a strategic new program initiated by World Wide Fund for Nature (WWF) Wallace Bioregion-Bali.

Collaborating with other environmental non-governmental organizations, concerned members of the private sector and individuals, WWF launched the program with one final objective: the conservation of Bali's precious coral reefs.

The West Bali National Park, Waka Shores, Reef Seen Aqua-



WWF Wallace Bioregion

A pristine stretch of coral off Bali. Human activities such as dynamiting and polluted runoff from surrounding communities have seriously damaged the island's coral reefs, with little more than 29 percent of hard coral remaining in major diving areas.

tic, Matahari Dive Center, Bali Hai Diving Adventure and Duria Salam Lembongan were the stakeholders in the program.

The program is employing aggressive campaign methods to reach a wider and bigger audience. In April there was a photo, video, poster and comic competition. In May the activists visited several schools, which are located near diving sites in Denpasar, Gilimanuk, Sanbey Klampok, Pemuteran and Nusa Lembongan island.

The activists tried to draw the students' attention to the issue of preserving coral reefs through games, quizzes and slide show presentations.

Meanwhile, as "If I Were a Fish" themed children drawing competition, replete with a quiz, games and child singers, was held in early June. Hundreds of children swarmed the venue of the competition.

And, in cooperation with Hard Rock Beach Hotel's man-

agement, the activists not only succeeded in staging a concert, but also organizing a two-day exhibition on coral reefs at the hotel. A simple newsletter, FOR Post, is also published on a regular basis to communicate the program's idea to a wider audience.

A two-day Reef Check and Underwater Clean Up was held in May at Bali's new prime diving sites, including Menjangan island, Ansel, Pemuteran, Nusa Lembongan island, Nusa Penida island and Sitaru, and involved 34 experienced divers and three marine scientists. The results showed that illegal fishing, either by poisoning or dynamiting, land-based pollution, sea-based pollution and the global warming phenomenon had inflicted heavy damage on a large portion of the once pristine coral reefs. Only one dive site, Pakuh beach, is still in relatively good condition, with a hard coral population percentage ranging from 48.3 percent to 53.8 percent.

The rest had an average 28.1 percent hard coral population.

"Indonesia once had the richest and the most diverse coral reefs in the world. Currently only 29 percent of it is still in good condition," Setriani said.

Put it simply, she added, they had no choice but to work fast and aggressively, otherwise Bali would lose its coral reefs forever.

Figure 3: Jakarta Post covers "Friends of the Reef" campaign, including Reef Check.



# Karimunjawa

## Sorga Petualangan 'Diving'

Kedaulatan Rakyat, 11 Agustus 2001

**BISA** menikmati keindahan kehidupan di dasar laut Kepulauan Karimunjawa merupakan kesempatan luar biasa. Kehidupan berbagai jenis terumbu karang warna warni yang masih utuh serta berbagai biota laut seperti berbagai jenis ikan termasuk ikan pari bisa dilihat dengan jelas berkilauan saat menyelam.

Tak heran bila orang yang pernah menyelam atau 'diving' atau 'diving' di Karimunjawa biasanya mengata-kan sebelumnya Karimunjawa lebih bagus dibanding Bunaken di Manado laut perairan penyelaman. Bunaken hanya indah memang 'merek' di mata pengunjung suka-suka saja, sementara bunaken banyak yang tahu soal indahnya bawah air di Karimunjawa karena kemampuannya publikasi.

Karimunjawa merupakan 'surga' bagi penyelam dan bagi penikmat keindahan laut. Bagi orang yang karena sesuatu hal tidak bisa atau belum menyelam, keindahan itu bisa pula dinikmati dengan cara 'snorkeling' (berenang dengan kamera/masker dan selang pernafasan yang mengapung berlabuhan dengan udara luar) dengan mata memandang dasar laut.

Snorkeling bisa dilakukan karena perairan Karimunjawa sangat jernih airnya sehingga di kedalaman 2 meter bisa terlihat jelas kehidupan bawah laut di sana. Selain itu, banyaknya gugusan pulau, beberapa di antaranya tidak berpenghuni, menambah nikmatnya bagi jiwa yang senang berpetualang. Tak heran pula bila semakin banyak wisatawan itu selama beberapa hari, biasanya sepekan.

Untuk menikmati keindahan kehidupan laut di Karimunjawa biasanya diperfikan waktu relatif cukup lama atau sekitar seminggu sekali bila pula yang bagus satu dua hari saja. Saat waktu ada kalanya pula dengan jadwal satu-satunya kapal ASDP atau kapal penumpang besar berlayar dari Jepara ke Karimunjawa pergi pulang. Kapal berangkat dari Jepara ke Karimunjawa Sabtu dan Rabu, sebalik-kan dari Karimunjawa ke Jepara Senin dan Kamis setiap pekan.

Biasanya penyelam berangkat dari Jepara laut Sabtu pagi sekitar pukul 08:00 dengan kapal ASDP dan kembali tiba di Jepara Kamis sore. Namun ada pula yang 'nakal' menikmati selam menyelam di Karimunjawa karena berangkat dari Jepara Sabtu. Minggu menjelang dan Senin pagi berangkat kembali ke Jepara. Tiket kapal Jepara-Karimunjawa (perjalanan 6 jam) relatif murah Rp 11.500 (Rute ekonomi) dan Rp 16.500 (Rute VIP) atau terdapat bisa pula ikut kapal nelayan dari dan ke Karimunjawa namun waktu tempuh lebih lama dan resiko masuk laut jauh lebih besar karena ukuran kapal nelayan jauh lebih kecil dibanding kapal

**ASDP.**

Jarak Jepara-Karimunjawa sekitar 45 mil laut atau Semarang-Karimunjawa sekitar 60 mil laut. Sebetulnya bagi yang berminat menyelam lebih baik ada pesawat kecil berpenumpang 4 orang (Doray) melayari rute Semarang-Karimunjawa pergi pulang yang lebih singkat hanya beberapa menit saja. Penerbangan seminggu dua kali terma-but akhirnya.



rikmati keindahan aneka ragam tumbuhan dan makhluk laut, serta bisa menghindari kerumitan tidak sengaja terumbu karang dari penyelam misalnya terjatuh-jatuh.

Lain halnya di kedalaman sekitar 3 meter, kondisi dasar laut terlihat 'terumbu-sembing' ombak dari

berhenti sampai selam karena kurang minat meski keindahan air bawah akan dibukanya kembali jalur penerbangan rute pendek tersebut.

Banyak pilihan kedalaman bagi petualangan selam di Karimunjawa mulai yang 3 meter, 5 meter, 10 meter, sampai yang sekitar 15 dan 20 meter. Menurut Farid mahasiswa Ilmu Kelautan Uday yang anggota Marine Diving Club (MDC) fakultas tersebut menyelam sangat sepi di kedalaman sekitar 10 sampai 15 meter. Karena air laut di kedalaman tersebut sangat tenang dari pengaruh ombak sehingga dengan sangat leluasa penyelam bisa me-

perhatikan laut sehingga perlu ekstra hati-hati dan pandai-pandai dalam 'buoyancy' (keseimbangan tubuh) penyelam bisa tidak ingin masuk karang yang indah tersebut. Farid pula yang akhir bulan lalu sekitar seminggu memimpin puluhan anggota MDC (dikembah pe-merintah dari luar Uday) menyelam di Karimunjawa untuk berpartisipasi sekaligus investigasi/monitoring jenis dan keberadaaan gugusan terumbu karang di kepulauan itu (Reef Check). Dengan peralatan lengkap seperti kamera bawah air dan video bawah air MDC berhasil merekam kehidupan terumbu karang dan biota laut di

Karimunjawa secara reguler untuk memantau kehidu-pan, pertumbuhan, dan kerusakan terumbu karang di sana.

Mengenal perlu ketenangan diri dan mata mengukir diri sendiri atau dengan kata lain tidak boleh mema-nakan diri. Misalnya saat badan tidak 'fir' atau sebat be-tul, misalnya koma itu, maka tidak boleh melakukan penyelaman karena bisa mengundang bahaya bagi penyelam sendiri. Seperti misi Persatuan

Orang-orang Sukan Selam Indonesia (POSSI) "Walaupun Diras Asuransi" yang kurang lebih selalu waspada dan mampu mengukir ketenangan diri sendiri penyelam dalam aktivitasnya". Meski makin banyak prestasi aktivitas selam di Indonesia belakangan ini, namun jumlah mereka masih relatif sedikit dibanding dengan jumlah penduduk serta kawasan wilayah Indonesia yang tiga perempatnya berupa lautan atau perairan.

**BERPETUALANG** menikmati keindahan kehidupan bawah air laut seolah mempe-tilikan ilmu yang dipelajari sekaligus ikut andil dalam upaya pelestarian biota laut sang-gatlah menyenangkan. Setidaknya itulah yang dilakukan sejumlah personel Marine Diving Club (MDC) Ilmu Kelautan Uday yang melakukan penyelaman di Kepulauan Karimunjawa, Jepara, Jember akhir bulan lalu (27-27 Juli 2000).

Dipimpin Ketua Tim MDC, Farid didan-gingi 2 dosen senior Oklasi Jepang) ahli biologi terumbu karang Ir Wina Widjanto MSc dan Ir Murni MSc, 48 orang termasuk peserta di luar MDC seperti dari SAR UNIS, mahasiswa Biologi dan Perikanan UGM, Kedeptan serta Geografi UMS) menikmati pemandangan indahnya kehidupan berbagai selam laut serta terumbu karang berwarna warni.

Penyelaman dilakukan bekerjasama dengan WWF Wallace Borngton Hall dan Radio Corpora FM.

Pada penyelam menikmati dan men-data kehidupan terumbu karang serta berbagai jenis ikan di Karimunjawa.

Kegiatan penyelaman dilakukan setiap tahun sehingga bisa mengontrol keindahan alam yang masih cukup perawan tersebut secara periodik.

Di kedalaman 5, 10, 15, dan 20 meter dengan air sangat jernih mereka mengamati cipratan Tulaan di bawah laut di sejumlah pulau di Karimunjawa. Berbagai jenis ikan warna warni, termasuk beberapa ikan pari, berkilauan di sela-sela dan di atas terumbu karang saat penyelaman. Namun peserta penyelaman sangat terpuja/mentakui beberapa bagian terumbu karang di kepulauan Karimunjawa menga-lami kerusakan berat. (Shaggy B-k)

Figure 4: Local newspaper, Kedaulatan Rakyat, covers Reef Check survey at local "Divers Heaven"

WWF INDONESIA WALLACEA DAN MARINE DIVING CLUB MENYELenggarakan :



# REEF CHECK KARIMUNJAWA 2001

*REEF CHECK KARIMUNJAWA 2001 merupakan rangkaian kegiatan yang akan dilaksanakan diseluruh dunia, dan merupakan kegiatan resmi untuk memperingati Hari Bumi Internasional pada tanggal 22 April dan Hari Lingkungan Hidup sedunia pada tanggal 5 Juni serta implementasi program "Friend of the Reef" WWF Internasional.*

*Kami mengajak anda untuk aktif dalam pendataan aset terumbu karang yang dimiliki oleh Indonesia, dengan mengikuti rangkaian kegiatan REEF CHECK KARIMUNJAWA 2001.*

**BENTUK KEGIATAN :**

1. Transek terumbu karang dan ikan
2. Pengamatan benthos dan indikator lain
3. Pengamatan substrat dasar laut
4. Penyuluhan masyarakat tentang pentingnya fungsi ekologis terumbu karang

**PERSYARATAN :**

- Mengisi formulir pendaftaran atau bukti transfer bank
- Membayar kontribusi :
  - Mahasiswa Rp. 285.000
  - Umum Rp. 375.000
- Jumlah peserta terbatas
- Pendaftaran ditutup 14 Juli 2001

**WAKTU DAN TEMPAT PELAKSANAAN :**  
20 - 27 Juli 2001, Kepulauan Karimunjawa

**FASILITAS :**

- Transportasi (Semarang - Karimunjawa pp.)
- Penginapan dan akomodasi di Karimunjawa
- Penyelaman SCUBA
- Asuransi
- Sertifikat Reef Check dari WWF
- Kaos Reef Check

*Jika anda tertarik untuk bergabung dengan REEF CHECK KARIMUNJAWA 2001 sebagai relawan, sponsor atau donatur, silahkan menghubungi :*  
Marine Diving Club (MDC)  
Jl. Ngesrep Barat VI/A1 Semarang  
Telp. (024) 7474136  
e-mail : RC2001\_MDC@yahoo.com

*Bantuan dana dan donatur dapat melalui rekening bank BCA kantor cabang M.T. Haryono*  
No. Rekening : 2520427221  
Atas Nama : Adian Andi



Diselenggarakan Oleh :




Didukung Oleh :




Figure 5: Leaflet made by Marine Diving Center to attract volunteers.



Kedaulatan Rakyat, July 13, 2001

**PRIHATIN KERUSAKAN TERUMBU KARANG**

## Undip 'Reef Check' di Karimun Jawa



**SEMARANG (KR)**- Prihatin semakin rusaknya gugusan karang dan ikan di kepulauan Karimun Jawa Jepara, Undip 20-27 Juli 2001 mendatang kembali melakukan 'reef check' atau inventarisasi jenis-jenis terumbu karang maupun biota laut di kepulauan indah tersebut.

Kegiatan serupa telah dilakukan setiap tahun sejak 2 tahun terakhir sebagai upaya pemetaan karang laut di Karimun Jawa sekaligus sebagai kontrol akan kekayaan laut yang tak terhingga nilainya.

Ketua Marine Diving Club (MDC) Jurusan Ilmu Kelautan Fakultas Perikanan dan Ilmu Kelautan (FPIK) Undip Wahyu Sigit menyatakan 'reef check' kerjasama dengan WWF Wallacea Bioregion Bali dilakukan untuk memperingati Hari Bumi Internasional 22 April dan Hari Lingkungan Hidup se-dunia 5 Juni 2001 serta implementasi program 'Friend of Reef' WWF International.

"Sasaran 'reef check' Karimun Jawa 2001 untuk meningkatkan kesadaran masyarakat mengenai pentingnya pelestarian terumbu karang dan menambah kecintaan serta penghargaan masyarakat dunia terhadap terumbu karang. Pemilihan Kepulauan Karimun Jawa karena kepulauan ini masih memiliki potensi terumbu karang yang baik sehingga perlu senantiasa di-data terus dan dijaga kelestariannya oleh masyarakat", ujar mahasiswa Ilmu Kelautan angkatan 1998 tersebut.

Selain itu, tambah Wahyu, MDC secara kontinyu sudah memantau kondisi fisik dan alami-ah terumbu karang melalui serangkaian kegiatan penyelaman ilmiah sehingga diharapkan akan terbentuk analisis menyeluruh mengenai terumbu karang yang nantinya berguna bagi acuan pengembangan setiap sektor. Kegiatan 'Reef Check' dibawah koordinasi MDC Undip dengan kordinator Ir Wisnu Widjasmoko Msc serta melibatkan dosen FPIK Undip Ir Munasik Msc (ahli karang).

Sementara itu Sekretaris Panitia 'Reef Check' Nanang menyebutkan tujuan kegiatan untuk memberdayakan masyarakat dalam upaya pelestarian terumbu karang, memantau kondisi aktual dan ancaman terhadap terumbu karang dengan solusi pemecahannya, inventarisasi tingkat kerusakan terumbu karang, serta inventarisasi potensi biota ekonomis (Stock Density) di kepulauan Karimun Jawa. (Sgi)-c

Figure 6: Local newspaper, Kedaulatan Rakyat, covers Reef Check activities in at Karmun Jawa, Indonesia

**Appendix B: INDONESIA Section from Report on CAPCOR Project (Capacity Building for Coral Reef Conservation and Management in Southeast Asia)**

	Task	Status
<b>1</b>	<b>RC in Thailand</b>	
1.1	Planning Meeting	Completed
1.2	Training Workshops	On Schedule
1.3	Advertise RC	Completed
1.4	Produce training kits	Completed
1.5	Produce PR materials	Completed
1.6	Conduct RC	On Schedule
1.7	Reports	Submitted
1.8	Submit Data	Submitted on Schedule
1.9	Media Event	Completed
<b>2</b>	<b>Regional Training Ctr.</b>	
2.1	Planning meeting	Completed
2.2	Prepare materials	Completed
2.3	Training Workshops	On Schedule
2.4	Press conference	Completed in July
2.5	Final Report	Completed

**Table 1: List of Tasks accomplished in 2001**

There are two sub-projects in this scope of work.

*Reef Education:* To educate Indonesian school children (Grades 2-6) about the value of coral reefs, threats to their health and solutions to these problems.

*Reef Check:* To train volunteer Indonesian community leaders in Reef Check methods and to survey the basic health of coral reefs in Indonesia using Reef Check methods.

This project is being carried out by WWF Indonesia in conjunction with an on-going MacArthur Foundation grant to the Reef Check Foundation for coral reef education in Melanesia. The Reef Check Indonesia Coordinator, Mr. Ketut Sarjana Putra who is also with WWF, has managed the work.

## **TASKS**

### **Task 1: Coral reef education Indonesia**

**Objectives:** To collect and develop new training materials on basic coral reef ecology and management in Bahasa Indonesia suitable for Grades 2-6 and to train teachers to teach with those materials.

*Subtasks:*

**1.1 Collect existing educational materials from the government and NGO's**

Status: Existing educational materials have been collected from the government and NGOs. Additional materials being developed by other programs in Indonesia, such as Terangi (The Indonesian Coral Reef Foundation), have been added to this collection.

### ***1.2 Identify Gaps in age specific material***

Status: The project team has identified existing gaps in environmental education regarding marine issues. Much of the educational material available geared towards children in developed countries. The educational materials under development by the project team will help fill some of these gaps, including making the material more accessible to young children in a developing country such as Indonesia.

### ***1.3 Design and distribute new educational materials to Reef Check Coordinators***

Status: Educational materials have been translated into Bahasa Indonesia and distributed to Reef Check coordinators. These materials include the Reef Check brochure and a bulletin describing threats to Indonesia's coral reefs, and what students, educators, and scientists can do to help protect and restore Indonesia's coral reefs.

### ***REEF CHECK Regional Coordinators to hold teachers workshops in eight regions***

Status: This subtask has been completed in conjunction with the regularly scheduled workshops.

### ***1.4 Teachers to begin to teach with new materials***

Status: Reef Check Indonesia has been working closely with "Friends of the Reef" to meet the environmental education goals set forth in this proposal. In a recent program, Reef Check and Friends of the Reef, an NGO dedicated to coral reef conservation, held a drawing competition among elementary school children in Bali. The children were taught about coral reef ecology and conservation and asked to draw pictures of themselves as fish. We received hundreds of beautiful drawings from talented children (Figure 2). Reef Check will be using these wonderful works of art on promotional materials in Indonesia and elsewhere to raise awareness about coral reef conservation.



**Figure 7: "If I were a fish". Artist and contest winner: Angela K. Winna, St. Yoseph elementary school**



*Outcomes:*

- Coral reef education bulletins in Bahasa for school children and teachers;
- 500 Indonesian school children exposed to coral reef education.

*Expected Outcomes:*

- Indonesian teachers trained in coral reef ecology and management teaching

**Task 2: Reef Check Monitoring and Management in Indonesia**

The Indonesian team reports that Reef Check has been well accepted by the scientific community and decision makers in Indonesia as one tool for raising public awareness about the coral reef ecosystem. It also serves as a tool for broad-brush surveys well suited to the scattered distribution of reefs across the thousands of islands of Indonesia. Because the method is easy and user-friendly, the field trainers report that the method is straightforward to teach and it has been easy to involve the public in monitoring their own reefs.

Media coverage was achieved from an international press conference held on October 21, 2000 in Bali in conjunction with the 9<sup>th</sup> International Coral Reef Symposium. It was successful in distributing information about Reef Check and the condition of coral reefs in Bali to a wide audience through local papers and international media such as the Economist magazine. Additional media coverage has promoted the management of volunteer surveys by dive operators, thereby expanding opportunities for participation by volunteer divers. Another media coverage events were at two Friends of the Reef Launching (April 22, June 14) where Reef Check was included in press and media coverage, and at Reef Check national training and workshop press conference in July 2001. The occasions were successful not only in distributing information about Reef Check, but also in securing commitments from Reef Check participants and attracting new volunteers at the national level.

Another media event that reached a wide audience was the release of the song. 'Hingga ke Terumbu Karang' (Up To the Reef) by popular Indonesia singer Nugie. Reef Check and WWF were involved in helping Nugie write his popular song which promotes coral reef conservation and relates the impacts of poorly planned development on land to the impacts on downstream coral reefs. Nugie sang his song at Bali Hardrock Café Hotel to help celebrate "Ocean Day" on June 14<sup>th</sup>. Attendees from the Bali "Kids club" sang along and learned about their reefs. The song was spotlighted on MTV Asia on July 5 and has helped raise awareness and knowledge among the younger generation.

***Sub-tasks:***

***2.1 Planning meeting with partners and regional coordinators***

Status: A planning meeting was held on schedule in Bali in October 2000 and attended by Reef Check director Dr. Gregor Hodgson and Indonesian Reef Check coordinator Ketut Putra. The meeting produced the Indonesia contract and workplan, which serve as the basis for project

management. In addition, a second planning meeting was held in Jakarta in April 2001 in conjunction with the NOAA Coral Trade conference. Attendees were Dr. Gregor Hodgson, Ketut Putra, and the project manager, Naneng Setiasih. These meeting resolved a variety of planning issues.

## ***2.2 Conduct International GCRMN / Reef Check training workshop Oct 2000***

Status: A successful workshop was conducted in Bali, Indonesia in October 2000. A list of participants and the workshop program are attached (see appendix A).

## ***2.3 Reef Check training workshops in eight regions and team registrations***

Status: 271 volunteers were trained in Reef Check methods and educated about coral reef conservation and management (See table 1).

Reef Check trainings and surveys have been conducted in the following locations and dates: Seribu Islands, Jakarta (September 21-24, 2000), Jawa Tengah, Karimunjawa (September 23-28, 2000), Sironjong Island, Sumatra Barat (October 2-3, 2000), Bali, (October 13-19, 2000) Makasar, (November 2-4, 2000), NTB, (December 9-11, 2000), Manado, Sulawesi (May 13, 2001), Derawan, East Kalimantan (May 26-28, 2001), and Lampung, (October 11 – 15 October 2001).

A national training was held in Bali on July 23-24, 2001. This training was held in lieu of some of the planned regional trainings due to the unstable political climate in some areas of Indonesia. The 18 participants included volunteers from local NGOs, students, teachers and other educators, government employees, reporters/journalists, and dive operators from Bali, Lampung, Aceh, East Java, East Kalimantan, Riau, Jakarta, South Sulawesi, Yogyakarta, North Sulawesi, and West Java.

The training was followed by a workshop that focused on further skill development for Reef Check trainers. Experienced Reef Check trainers gave presentations on the lessons they have learned from using Reef Check for 5 years (1997-2001). Feedback from newly trained Reef Check trainers indicated the lessons learned from the more experienced trainers will help the new trainers network with other Reef Check trainers to achieve two goals. The first goal is to raise public awareness about the coral reef environments and the threats to it. The second is to increase the capacity for coral reef management in Indonesia through Reef Check activities.

One important result from the workshop was the development of the first official regional network. West Java will be the first region to run Reef Check independently (with continued supervision from WWF/Reef Check Indonesia). This regional approach will hopefully lead to the full establishment of a regional network and therefore increase Reef Check's independence and ensure the sustainability of Reef Check activities without large external funding inputs.

<b>Location</b>	<b>Date</b>	<b>Planned # Participants</b>	<b>Planned # Surveys</b>	<b>Status</b>	<b>Actual # Participants</b>	<b>Actual # surveys</b>
Sumatra (Lampun & Belitung)	Sept 2000	80	12	Completed	<b>40</b>	<b>3</b>
Palau Seribu Nat'l Park, Java	Sept 2000	45	4	Completed	<b>40</b>	<b>3</b>
Karimun Jawa Nt'l Park, Java	Sept 2000	20	6	Completed	<b>20</b>	<b>6</b>
Bali	Oct 2000	35	12	Completed	<b>35</b>	<b>9</b>
Lombok (NTB)	Feb 2001	10	4	Completed	<b>24</b>	<b>3</b>
Riung Kupang (NTT)	March 2001	20	8	December 2001	<b>20</b>	<b>8</b>
Manado)	May 2001	25	4	Completed	<b>24</b>	<b>2</b>
East Kalimantan	May 2001	10	4	On Schedule	<b>13</b>	<b>4</b>
Makasar (Take Bone Rate)	May 2001			Completed	<b>7</b>	<b>6</b>
Papua (Cendrawasih Park)	July 2001	10	2	Cancelled		
Karimun	July 2001			Completed	<b>48</b>	<b>12</b>
Lampung	Oct 2001	Not in original plans		Completed	<b>20</b>	<b>4</b>
<b>Total to Date</b>		(255)	(56)		<b>291</b>	<b>60</b>

**Table 2: Reef Check Training and Survey locations and dates**

#### ***2.4 Advertise Reef Check 2001 in national media and newspaper***

Status: Reef Check has been publicized by SCTV, Bali Sun, TVRI Lampung, Indosair Jakarta Post, Nusa Newspaper, Radio News 68H, Paradise FM, Top FM, Penguin FM, and other local radio stations and newspapers.

#### ***2.5 Design, print, and circulate Reef Check data and information kits (Reef Check Slates, Guidance, fact sheets)***

Status: Reef Check slates, fact sheets and the brochures have been translated into Bahasa Indonesia and printed. The translated instruction materials have been posted on the Reef Check website (www.ReefCheck.org).

***2.6 Design and produce Reef Check's PR (500 T-shirts, 500 hats, 1,000 RC leaflets, RC certificates) targeting public.***

Status: T-shirts and hats have been produced and have been distributed to participants in training workshops. Leaflets have been produced and distributed.

***2.7 Conduct Reef Check at national level from November 2000 through September 2001***

Status: 52 Reef Check surveys have been completed out of a planned 56. Some additional surveys and locations were added due to the high enthusiasm from the volunteers. Some monitoring activities were delayed or even cancelled due to the unstable political conditions in the particular areas.

***2.8 Mid-term report (April 2001) (for Tasks 1 and 2)***

Status: The mid-term report has been received by Reef Check Headquarters.

***2.9 Submit data to Reef Check at UCLA (September 2001)***

Status: Reef Check Headquarters has received all data collected to date and has included it in the global database.

***2.10 Write and Publish Reef Check report (September 2001)***

Status: Expected completion December 2001.

***2.11 Media event (press release September 30 2001)***

Status: Two press conferences were held to announce the result of yearly Reef Check Indonesia results. The 1999 results were presented in a press conference on October 21, 2000. The 2000 results were presented at a press conference held on July 26, 2001.

***Achieved Outcomes:***

- All Reef Check training and PR materials published in Bahasa Indonesia
- Twenty new Reef Check trainers trained and ten new teams formed throughout Indonesia
- 60 Reef Check surveys carried out.
- Indo database established and data submitted to global Reef Check database

***Expected outcomes:***

- 13 more Reef Check surveys carried out (11 more than in original plans).