



GAUDENCIO CARDINAL ROSALES

Archbishop of Manila

Gaudencio Cardinal Rosales is the head of the Archdiocese serving nearly 3 million Catholics. Prior to this, he was the Bishop of Lipa from 1993 to 2003. He was assigned as Bishop of Malaybalay in Bukidnon, Mindanao from 1984 to 1993, where he gained recognition as an environmental advocate and led one of the most active and prominent anti-logging campaigns by the church, environmental groups, and people's organizations in the late 1980s.

He was born in Lipa, Batangas, in the Luzon region. "In Batangas, I remember my father had the farm. The farm was in the barrio, but we lived in the town. I remember during the war, there was an empty lot that belonged to my auntie. We would plant *pechay*, squash, and we used to water them. I was in charge of the goats and I would milk the goats. That was the closest I was to nature. I took care of more than 20 goats, and it was my responsibility to ensure that we had milk in the morning.

"I brought that experience with me, even when I was in the seminary. I had my students take care of the garden. I myself would water the plants. The other day I was in Tagaytay for a renewal and I asked the rector to put up a garden because it's good for the kitchen, good for the economy, and good for the soul. If you take care of living organisms, you relate with life. I was able to convince the rector to put up a garden there."



But his “environmentalism” would come to fruition in Bukidnon when he was assigned as the Bishop. From the exhilarating moments of successes and achievements to the agonizing and painful realities of friends and colleagues harassed and murdered, the questioning from his peers and from himself on whether the actions they took should be continued or not, and finally the vindication and affirmation, all these glories and pains he took with a quiet dignity that speaks volumes of his leadership and integrity.

Pointing to a painting in his office, Cardinal Rosales explained, “That painting was done by the national artist, the late Nonoy Marcelo, a famous cartoonist and (was based) on what they heard about the militancy of the church. He never saw me, never met me, he was just given my picture. He did it to dramatize that the church was championing the cause of ecology. It was on the cover of the now defunct Manila Chronicle. I read the article and it was actually very tame.”

We then proceeded with his Bukidnon experience. “My engagement (with concerns on forests and the environment) before was because of Bukidnon. If I had not gone there, I would not know anything about the environment. It was educational – to see the people suffering, but not in my wildest imagination would I have linked this with forests in the early 1980s.”

“From the convent, I just gave rice, until the farmers complained they could no longer harvest. I thought, what does this mean? At that time I was not conscious of it. And then they started talking of less water. Then I started reading. We had the Redemptorists who started reflecting with people. And I understood from then on that there is a connection between forests, rivers, springs, and irrigation. This was in the mid-1980s.”

“We went through an education with priests and people, side by side in San Fernando, Bukidnon. The birth of Bukidnon’s concern for ecology was in that area. We undertook a catechism of ecology. We asked someone to make a guide for homilies that we read for more than a year. This activity accompanied what was happening in San Fernando (*where people stopped the logging trucks from Lanao del Sur by amassing in the middle of the road*). A trained catechist did the research. A question-and-answer catechism was happening all over



Bukidnon, still a watershed province, has little protection against prospective mining. It has 25% forest cover but needs 50% area for slope protection. Twenty-one% of the forestlands are degraded and cogonal, yet less than 1% tree plantation in the uplands



the diocese. The priests added their comments. It was so powerful that the DENR asked – what forester did this?”

“In San Fernando, there were demonstrations in the streets and prayer rallies on the road. By then, it was no longer catechesis, it was a militant stand versus loggers. People blocked the logging road, they were fasting, they were praying, and the news reached Manila.”

“The DENR declared a logging ban in the area in the 1990s, but they couldn’t enforce the ban effectively. DENR Secretary Factoran sent Undersecretary Victor Ramos, who did an investigation and saw how true the farmers’ accusations were. Ramos and his team went back to Manila and reported that what the farmers and church were saying was true.”

“Around this time, the rallyists were fasting and were stopping the trucks. Secretary Factoran admitted that they did not have enough foresters and personnel to implement the logging ban. The DENR saw that the church was able to stop the logging, with their approval, and Secretary Factoran saw that as an accomplishment.”

“Then he appointed me as a forester with a license number. I said, ‘Thank you very much for doing this.’ But I was thinking, was he trying to make fun of me? It was an honor. I said, ‘Thank you for appointing me, the Bishop of Malaybalay as a forester. But I can’t do it as I have a million other things to do. If you really mean it, can you appoint all my priests?’”

“Secretary Factoran then appointed all of them, even the deacons, even the old ones. Then I said, ‘but then if you want business done, we need to be trained.’ And the DENR Regional Executive Director (RED) trained us. They went to the Bishop’s house and made it a place to train priests.”

“It was a crash seminar: measuring the diameter of logs, determining if the logs are new or old. For three to four days, the house became a seminar house. That was the beginning of the agony.”

“Armed with the appointment as foresters, the priests could now confiscate. I told them, ‘Now this is critical because this is actually the government’s job. Now that

we have the power to confiscate, impound, no priest will do it without the accompaniment of the Philippine National Police, the Constabulary and members of the Basic Ecclesial Communities (BECs).’ And they did that. We were on the news. We monitored very closely the movement of logs. There were no cellular phones then. A German bishops group, Misereor, helped us acquire two-way handheld radios. We were really equipped. (Our capacity to alert was such that) 24 hours before logging trucks reached the highway, we already knew. We stopped almost 100 of these trucks.”

“We also became too powerful and three of our priests were targeted. One day, one of them, Neri Satur, asked permission to say mass in one of the barrios and he was ambushed. People began arming around the rectory. The other priest we sent out of Bukidnon and he never returned. The third priest stayed.”

“This was the engagement in Bukidnon and I took an interest in this personally. I remember in one meeting of the priests, one of them told me that this was my personal crusade. I said this is the project of the church, this is not my personal campaign. It is the responsibility of the church to the needs of the times.”

“Some were blaming me for the loss of Father Neri Satur. I was under fire at that time. The bishops in Mindanao and the priests in the diocese were criticizing me. When this was happening, I must confess that at night I could not sleep because of the dangers brought by being non-violent all the way through. We were protesting, but we were non-violent. In the book I wrote on Father Neri Satur, I wrote about telling workers in San Fernando that if there were armed people, we would not allow nor tolerate this.”

“In an assembly of priests and religious workers in Malaybalay, we asked, ‘Shall we continue or not?’ In a span of 10 years, we lost two lives. In 1981, Alingal Gudafred was posting the injustices in his parish and was killed by armed people. Up to now, they do not know who was behind the killing. Then, it was Neri Satur in 1991. Should

we continue? On the third day of reflection, it was unanimous. They said ‘Bishop, since we are doing this from the gospel for the people, we shall continue.’ It was unanimous and I felt vindicated. I recovered from all those criticisms.”

“I was in the Diocese of Malaybalay for 11 years. One thing I could say is that God gave me the experience to see the change in people’s perspectives, and the change in the priests’ understanding of care for natural resources which they then explained these in their homilies. The concern and understanding of communities expanded, covering the entire diocese.”

“There were a number of rich people in Malaybalay who criticized us and said that we were radicals. But you know, again, my vindication is this: when some of these trucks would escape the lines, the schoolchildren, perhaps in Grade 4 coming home from school, when they saw the big trucks, they would shout, ‘*To kang kini*’ (It’s bad!)”

“So for me, there was 1, a change in perspective, and 2, they responded. Some priests went beyond what was asked of them. In Bukidnon, there would be no marriage unless the couple planted trees. They thought we were kidding, but we had the means to check.”

“There were some difficult moments also. As a pastor, I had to look at both sides. Some priests had some misgivings with what I was doing. Priests would confiscate logs in jeepneys, with the leaders and the constabulary. Some of the jeepneys were hired and the owners would ask if the jeepneys could be released because they would not earn (any income). In one case I released it, and the group of priests who confiscated sulked. They said, ‘What kind of a bishop are you? You ask us to do something, then you reverse it.’ I said, ‘He’s still paying for the amortization. I had to look at both sides.’ The priests said, ‘You should not do that.’ There were painful moments, but we ended up good friends.”



Only logging today is in the Bukidnon Forest Incorporated Plantation area where Benguet pines being cut and new pine is being planted outside Malaybalay City

“Today, I am now beyond the forest, at different levels it is the whole environment and life of people. We are behind on this, even on awareness. When you talk with some people, even some priests, they could not connect our present life with the way we mishandled the protection, consumption, and the conservation of natural resources. Some people are still not aware.”

“That was the time when media started paying attention to us. Even when Fr. Neri died, we hardly came up in the media. We have to thank the foreign press – *Newsweek*, *Time*, the German and Swiss magazines, CBS – who consistently covered us in 1991-92.”

“When Misereor came to us, they sent questions and I answered them. I did not even bother to correct what I wrote, I just sent them my responses. Then they said they liked what I wrote and they sent me to the Rio Summit. They invited me to Germany three or four more times.”

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“I remember when I was still in Lipa, and I was invited to give a talk at the Institute for Church and Social Issues at the Ateneo University campus in Quezon City. The hall was filled with students and some professors. This was in 1995, after my Bukidnon assignment.”

“Fresh from Bukidnon I said, ‘This is a very serious ecology problem. It does not just cover forests only – there is water, trash. The way we look at it, you people in the academe must be able to inform others. We must be able to link this with our style of life. There must be a new catechesis that must be able to explain this to the people of today. When the Catholic Church Catechism book came out, there was nothing specific to the environment except the chapter on the seventh commandment - Thou shalt not steal. That could serve as an introduction into our ecological problem. We are at a stage where we need to convince people of the ecological problem. There is still a lot to do. The academe, you people with a lot of resources, please do something about it.’”

“We are also behind in actual practice. I remember that in Batangas in 1997. There was a time when Batangas was starting to be the trash

dump of Manila, and we fought them. The governor was near to accepting it already. In Malabanan they said there was no seepage, but it was 4.5 kilometers from Taal Lake. In our assembly, they thought we would only address a few people, but 800 people showed up. We invited the governor and explained the seepage problems. We told him that if he does not stop it, all these people plus their communities would demonstrate. Of course we succeeded.”

“Batangas Bay is a gulf. There are refineries there. Nearly half of the oil in the country passes through there. They have submerged pipelines and there is a great potential for emissions and exposure. Verde Island Passage was recently declared the richest marine biodiversity in the world. The biggest electric power plant is also there.”

“Where we are is we are weak in information and our implementation of programs is even weaker. The present governor, *Ate Vi* (her more popular name as a dramatic film star or Vilma Santos-Recto), has one thing in her favor, she cancelled the permit to put up a spa on Taal Volcano.”

Cardinal Rosales is in Manila now and is hard put in defining where we can re-establish the relationships with the land, especially amongst children. “In the city, what garden can you relate to? In Bukidnon it was clear, everywhere you look you see the fertility of the land. I recall someone telling me in 1982, as we were looking how fertile the land was, how anything seemed to grow. We noticed that the trees were equidistant along the church property that we fenced by posting sticks with barbed wire. The sticks grew into trees! That’s how fertile it was. Even if it’s in parts, people need to relate to nature. I am currently reading “The Nature of Things” by David Suzuki, where he links everything with life.”

In terms of indigenous peoples (IPs), “of course the claims of our brothers are not properly listened to by governments, sad to say, even now. When I was in Bukidnon, that was clear.”

“It is sad that even now, governments do not listen to claims of IPs. And it pains us to know that in a clash between claims of IPs and people with money, the investors, the government pays more attention to investors rather than the claims of IPs. It’s quite sad that it’s still on that level.”

“I discovered something when I was in Bukidnon after the collapse of the Marcos government. This was in relation to several thousand hectares of Manobo land leased to powerful people, friends of the dictator. When I read the contract, it was practically given away free. They did not pay attention to the claims of the Manobos. What pains me to find out was that these people who came from Manila and other parts of the country and who were better educated, should have helped nature. They should have helped the IPs get titles for the land that they have occupied from time immemorial. But instead, they used their education to grab that area. The IPs, they are always the victims.”

“I was shocked in 1982, I was talking with the Manobos in Calabugao and one of the tribe members asked, ‘Obispo, what tribe do you belong to?’ I was shocked by the question. I felt insulted at the beginning, until I remembered that Tagalog is a tribe, “*taga-ilog*” (from the river). I have lost touch with my original tribe. My education has lost me my tribe. If I am like this, it must be the same for others. People who are better off seem to think only of themselves and forget about their tribe. It seems that the better off are better educated and better equipped to cheat others. How do we change that? We need to educate people. It’s a failure in education.”

“The Sumilao farmers who are marching (to appeal to the government for the return of their lands), are now in Samar, half way to Manila. I will meet them when they get here. These too are people of Bukidnon who have had their lands taken.”



“I look at ecology now from a broader sense. In Bukidnon, there were the trees and the forests, but these were only parts of the whole picture. There was the network of life – the global and universal. Air pollution, water pollution, these are all linked in this style of life. We cannot just pay attention to one. In the way we consume, use plastics, we need education for this. If you ask me, it is in education and value formation and in church lingo, evangelization.”

In this situation whereby there is still so much deterioration, Cardinal Rosales relates this to the incarnation of Christ. “Incarnation is a dialogue of God with humans. When the Word became flesh, the Son became human. It is a dialogue between the divine and the human. Therefore, there are many things God is communicating with us in Christ.

“As God dialogues with me, all life should be like that, from the highest to the lowest. We are dialoguing with creation. Dialogue is basically borne of respect that has its source in love. If that is incarnation, the human person must be able to repeat that kind of respect to any living thing. If we love nature, we must educate ourselves on it. If I recognize the dialogue of eternity and time, God and human, then in the same way I must educate myself to commune with nature. God incarnating in Jesus, who not only communicates, but educates us in that dialogue.”

“Dialogue is education, sharing yourself and accepting from the other. Basically, I share and educate myself. Catechism is not just education. It affects the way we relate with all of life. We were just taught how to make, use, and consume things, but not to enhance and nurture. There is so much wastage. We were taught that life must be convenient and comfortable. There is wastage in power, how things are sold. We have buildings with no windows, then we use lights.”

“It’s a battle between now and the future. The style of life must be affected. If we do not do anything, we are rushing to consume ourselves.”

For somebody who has seen and experienced so much in his work and in his life, the Cardinal says with a tired smile, “I look forward to retirement, going back home to Batangas where I was born. At first I thought I’d retire in Bukidnon, but I didn’t think I’d be back in Luzon.”

We must be able to link this with our style of life. There must be a new catechesis that must be able to explain this to the people of today. When the Catholic Church Catechism book came out, there was nothing specific to the environment except the chapter on the seventh commandment - Thou shalt not steal. That could serve as an introduction into our ecological problem. We are at a stage where we need to convince people of the ecological problem.



From Kainginero to Forest Management Director

ROMEO ACOSTA
Director, Forest Management Bureau
Department of Environment and Natural Resources

With the Philippines having had a run of around 35 years of social forestry and working with forests and people, Romeo “Romy” Acosta could not be blamed for feeling frustrated. Frustration is an oft-repeated word he used during the interview, and it marks the man who, since 2001, serves as the Director of the Forest Management Bureau, in charge of the forests and forest management in the Philippines. There is tiredness and disappointment etched in Romy, but the frustration also denotes a hopefulness and an active countenance, that yet something can still be done.

“I am still frustrated, we are going up and down and not moving as fast as we can. We are not there yet as I still see communities living on subsistence, on a hand-to-mouth existence, especially in the uplands. We have been able to give substantial assistance in understanding forests, but those writing about forests are not able to relate what communities need. The economic interests of communities are not being placed at the forefront. We keep on saying we’re going to give them credit facilities, but in reality, these are not readily available. I am frustrated, as we could have done more. We cannot be satisfied with the numbers; the number of households and of hectareage covered.”



“I grant that there were substantial inputs in empowering forest managers, but forest management is still being treated largely as a privilege. The real handing over of authority hasn’t happened. Government is saying one thing, but doing otherwise. There have been little successes in economic gains. And communities are frustrated too, as they expected more when we posed this community-based forest management (CBFM) strategy. To illustrate, there has been only been one forest management unit that got certification from the Forest Stewardship Council!”

Romy shared that “when the mass suspension of CBFM agreements occurred, people said that they will return the agreements, because government as a partner is renegeing on the agreement.”

Improving this partnership in the CBFM program “is a crusade that’s supported not by a few. I know that there still are junior and not so junior staff in government who want to make this work and continue to talk and improve on this partnership, in whatever way they can.” But Romy understands as well that this means tackling the bureaucratic functions of government essentially, and there is limited time to do this as things are moving so fast.

Romy grew up in the mountains of Nueva Vizcaya. His father was a poor farmer and their family had no land. “I was a kainginero, we were landless, and we had to depend on clearing some patches of forest. Once I tried to cut down a tree almost twice my waist size with an axe, and it was hard. In the morning, we set the traps for wild chickens that we collected in the afternoon. Forests are something I learned to accept as part of life.”

After high school, Romy dreamed of becoming an engineer or a doctor, but his mother told him that the family could not afford this and she pointed out to him the foresters “who are very rich, running around in shiny jeeps and suggested that I might as well take up forestry.” Actually,” Romy said, “the foresters who were rich were the scalers and the forest managers.” He eventually





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got a scholarship and ended up in the College of Forestry of the University of the Philippines at Los Banos.

Romy's sense of social forestry came out of having lived in forest areas. In college, at the height of student activism, he was naturally drawn to the "thinking that the elite should not have a monopoly on all these riches, all these natural resources."

During his early days as a young forester, he was very adventurous and enjoyed staying in the forests. "I used to sleep in the forests for days and days. I recall doing a forest inventory of Marag Valley in Cagayan, which is 'no man's land' now. We exchanged our tinned sardines with the Dumagats (the indigenous group in the area), who promised to gather fish, eels, and squid for us. It was mutually beneficial."

Romy recalls also that period as there was tension between them (the foresters) and the production engineers who were doing the cutting and meeting their logging quotas. "It was a not so unfriendly competition, in terms of who would remain standing after drinking up till 5 am. Our advantage as foresters is that we can go back to the forests and sleep, while the engineers have to go back to their plant and work," Romy laughs.

It was in law enforcement that Romy learned the darker sides of the timber trade, getting around regulations, the bribing and bribery tampering. "I was part of the special law enforcement group and was newly married then, and I would be sent to the field at a moment's notice, and disappear in the forest for days. I had to get on the first flight available. There were people in the airport who were regular fixers and even while I was waitlisted, my number would jump from 42 to 3! It was disconcerting for my wife as I would disappear on a Monday morning and return on Saturday in sandals and T-shirts. I slept on benches, sometimes posing as a charcoal buyer. One time, some guys from local forestry office recognized me, but I vehemently denied that I was Romy."

He recalls a special assignment to investigate the brother of a governor up north involved in illegal logging. “We checked in the hotel incognito, and when we woke up, there were hoodlums surrounding the hotel, ready to kill us. The family practically owned the province.” Romy called up the political enemies of the governor who were also into logging. “We got out of the hotel safely by riding in their car, and they dared not shoot us, otherwise it would have created a political war. It was exciting, but I wouldn’t like to go through that again.”

Back to the present, there are “some who think that we should be deregulated (especially during Secretary Gozun’s term),” but Romy admits that this requires a very controlled process, as one small instance of violation from self-regulation can spark and lead back to tighter regulations.

Another observation from Romy is that “media and conservation NGOs have demonized the use of timber and this thinking has pervaded law enforcement as well. Everything is initially seen as illegal until proven otherwise, and it is assumed that the wood was taken from public forests, until you prove that it came from private lands.”

“I don’t have a problem with issues of indigenous peoples (IPs), as I have been with them since my youth. However, there are many pseudo-IP groups now who are becoming agents of forest destruction, especially down south, lending the traditional indigenous way of doing things, but cutting down forests by the truckloads. And many in the DENR have problems with that,” Romy says.

Romy provides some suggestions as to where the Philippines can be in the next 10 years, given that there is a pervading loss of more forests.



“We keep on saying the forest industry is a sunset industry, but it is helping a lot of small processing plants, creating employment, motivating a lot of substantial values with the forest that is lost. If we just import, then nobody will start developing forests.”



“We need recognition by the leaders that forests are not just timber, and they can play a large part in the economy because of other services it can provide. And this does not just involve the DENR. The Department of Agriculture needs to be advised not to look at forestlands as merely potential areas for pineapples and bananas. The Department of Agrarian Reform must know that the certificates of land ownership they issue to agrarian reform beneficiaries cannot be distributed. The local government units need to be directly involved in forest management, such that when they want this piece of land, the first thing they will do is look at the appropriate forest management needed.

“We keep on saying the forest industry is a sunset industry, but it is helping a lot of small processing plants, creating employment, motivating a lot of substantial values with the forest that is lost. If we just import, then nobody will start developing forests. It is very complicated, and all major economic sectors should understand the value of forests.

“We talk of sustainable development, but nobody seems to have a concrete grasp of what sustainable development is on the ground. Sometimes, I am discouraged in international conferences when I hear about other countries that have left us behind in re-establishing their forests and who are managing their forests.”

Romy’s involvement in government forestry was originally in planning and policy work and he feels he has done a little bit in charting forestry policies. In acknowledgement, there has been a “big departure from previous policies.” His involvement in CBFM was also very memorable, as was his participation in ESSC’s Philippine Working Group (PWG) activities such as community site visits. “Before PWG, I was unemotional about communities, but I got better insights about what’s happening inside and the issues of tenure in communities.”

Romy has two things to focus on: 1) how to move community forestry forward and make it a significant factor in how forests are managed and handled; and 2) how to ensure that information technology is made useful and important in managing forests.

He regrets that “working in the office every day leaves me no time to do strategic thinking. I never have enough time to reflect, to correct things, and seek the missing elements.”

And if information is put together, if local governments can see how things are moving on the land, this provision of useful information can move communities forward. Local governments want to know and if they see the value of their forests and water resources, this will help greatly in the decisions they make.



VICENTE P. HIZON
Business Entrepreneur



Giving forests a break through garbage

“I’m interested in garbage, and my problem is there’s not enough of it for what I want to do,” can be a strange statement to make, but for Vicente “Vince” Hizon, this is what his budding business wants to do. Publicly known as a former professional basketball player in the country’s only professional basketball league, the Philippine Basketball Association (PBA), Vince is now exploring the business possibilities for his group, RecycleVision Global Technologies, Inc.

Vince wants to locally manufacture plastic lumber or wood plastic and he sees this business opportunity as one that can make money and at the same time help the solid waste situation, of which 33% is recyclable and mainly plastic-based materials. Using the innovations in extruding plastics over the past 30 years, plastic is mixed with virgin wood powder, but other residual waste can also be used such as rice straws, rice hulls, coconut shells and other agricultural/fibrous waste that can be mixed with scrap plastic. In fact, plastic lumber has been around since 1916, when the Rolls Royce carmakers used a plastic composite for the gear shift knob.

For Vince, what his group wants is “what people don’t want” and what people and local governments are now legally mandated to do, but do not, which is segregation and is the more tedious aspect in solid waste management. The problem of leachates in the garbage dumps and “sanitary landfills” illustrate how “concentrated the problem has become.”

Currently, Vince has an arrangement with a local government in Cavite, a province near Metro Manila, and he set up a demonstration area to show his operations. With a whole system for garbage and the technological process that his group applies, it is not another source of pollution. A municipal ordinance was already issued that allocates the proceeds from the local government earnings for the town's hospital needs. A garbage processing zone was identified where the materials will be composted, recycled, and the residuals transformed to products.

Vince showed samples of the wood-like plastic lumber final products and he is amazed at the diversity of plastics and fiber that can be mixed. Of the 25 types of plastics, only six are generally recycled, but he recycles all 25. The products keep the edges and the corrugations that may be needed and the tensile strength varies with the load bearing capacity and limit. It is also an economical alternative to wood that people can utilize for basic infrastructure. It has great potential to respond to basic services in shelter provision through low-cost housing programs and to reduce the dependency on exported and locally sourced wood. There have been initial discussions with the DENR and its Natural Resources Development Corporation to explore possible partnerships.

He got a consignment of thin plastics from Payatas (a garbage dumpsite in Metro Manila), which is most difficult to deal with, just to show how it can be integrated in the process along with a whole heap of other plastics.

Vince explains that the key is in the mixing and how this is done determines the strength and density of the product. Like all waste management, space is needed to sort and clean the material. Initially, the waste can be picked over for all that is immediately recyclable, such as bottles, metals, paper, and the biological material taken out for composting.





“What his group wants is “what people don’t want” and what people and local governments are now legally mandated to do but do not, which is segregation and is the more tedious aspect in solid waste management. The problem of leachates in the garbage dumps and “sanitary landfills” illustrate how “concentrated the problem has become.”

“Composting would be a major advantage at most of our dumpsites today, and others are doing this on a commercial basis, resulting in high quality humus for better soils. Plastics are the remaining bulk, including Styrofoam,” Vince says. The remaining plastics and Styrofoam are what Vince needs for processing wood-like materials that now have an international market. He is then virtually left with a clear floor and can start the whole process again, with no permanent dump needed. He suggests that the same can be done for medical waste.

Vince sees this effort in terms of contributing to solving a problem and how a solution may be done properly in helping the environment on a much bigger scale to reverse the exhaustion of the Philippine forests.



JESUS RAMON VILLARIN, SJ.
Jesuit Scientist

Philippine climate and change

With his background in physics, Jesus Ramon “Jett” Villarín worked with the Manila Observatory, a Jesuit institution in the Philippines historically known for its contributions to weather and climate research and Philippine cartography. Jett served as its Research Director from 1997 to 2006 and his major work focused on monitoring air quality through LIDAR¹ (Light Detection and Ranging) lasers. In 2006, Jett was appointed as President of Xavier University in Cagayan de Oro City in Mindanao. Jett’s work was increasingly drawn to climatology and he has become a much sought-after resource person in national and international fora on climate change and global warming.

His work relates to vegetation and forest cover on the carbon side and its mitigating impact *vis-à-vis* global warming. However, he maintains hesitation in the more popular focus on carbon sinks’ establishment and relying mainly on forests in bringing down the carbon levels. Jett understands too well that maintaining the forests in the long term require political and social commitments and responsibilities that countries like the Philippines may not fully be ready to achieve. The vegetation cover and its impact on reducing carbon levels in the atmosphere are established facts, and forests are crucial in ensuring stability in critical watersheds and micro-climates.



Forests in the Philippines buffer the effects of climate change and they are a stabilizing factor. It is very important that we have the forests, but they are not going to be a major counter to the carbon emission strategy. The buffering they do is crucial by way of maintaining a micro-climate on the surface and helps to mitigate the subsequent degradation that results from changes in the climate and the environment. The climate will change in Mindanao, irrespective of the forests, because the Philippines is oceanic, but the forests do have a buffering effect.

We discussed these matters as we drove from Davao to Cagayan de Oro, a six-hour ride south to north of Mindanao, and it was an opportunity to view an environment that has seen much change in forestland conversion. It was sad to see that just on the hills above the barangay public school, the cogonal lands were burning while the kids were playing basketball, illustrating how our most basic education does not often fit our needs. Yet there is the cultural ingenuity to utilize menial resources, evident in the well-split bamboo that delivered pure water right to the roadside for the local community and travelers alike.

The question is always how do we apply this ingenuity to strategic management. Cogon (*Imperata cylindrica*) lands are a wasted resource. On the other hand, you have the water that is available to anybody who needs it on a basic level. How to get this local creativity to fuel a much more responsive and accountable strategy?

“I don’t think that in the Philippines there are enough forests that could supply the carbon budget needed for its watershed areas,” Jett observes. The Mindanao scenarios, for example, are varied so that “while there is rainfall increase northeast of Surigao and you see flooding at this time, there is also the dry area in the south central, so those are extreme shifts in two areas. If the forests are not cut in these areas, they will have an effect in regulating these extreme shifts and swings.”

Another important forest relation is its micro-climate side, because “if you change the surface of the land, you would actually exacerbate the changes





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in the average land temperature, increase the potential for erosion, and change the moisture content until we reach an irreversible situation.” Jett worries that we are losing the micro-climate, as he has noticed “some effects on the moisture balance due to the micro-climate changes downstream.” And land-use changes that result from the clearing of forests and other natural vegetation affect the evapotranspiration of plants and consequently the balance of moisture in the air. These will then lead to changes in the amount of solar radiation that reaches the land and the formation of clouds. The net effect is a higher temperature on the land surface.

In a paper he co-wrote in 2006, “Is climate changing in Mindanao?” Jett affirms that rainfall is changing in Mindanao. He localized the global climate issue by exploring rainfall patterns in Mindanao in the last 50 years and the impact on crop production and the supply of freshwater resources.

Rainfall over the northern coast of Mindanao has generally increased over the decades, with the northeast section receiving most of the increase. But the southern regions are experiencing decreasing rainfall, mostly in the south central parts. Jett also looked at the probability patterns that indicated that most of the rainfall increase over northern Mindanao is unlikely and could have just as easily swung in the opposite direction. The impact of these rainfall changes over major croplands is high in the cultivated and managed areas of south central Mindanao, including areas on the northern coast of the Davao Gulf. Specifically, the probable influence is on crop productivity and the social development of the rural population largely dependent on agricultural livelihood. There is also the impact on freshwater resources and in terms of rainfall coverage, the Cotabato river basin will bear the most impact in the decreased supply and significantly affect public health, agricultural livelihood, rural to urban migration, peace and order, and other social concerns in these areas.

Changes in water table availability will lead to deeper water table extraction, so salination is already occurring in many areas.

Jett also realizes the problem of communities not being allowed to harvest anything, and that there is a certain point when they will stop planting. He agrees that if there is a percentage level of sustainable cutting allowed, communities will be encouraged to plant more. In mangrove areas, the biggest loss really comes from the expansion of fishpond areas, not community cutting.

In the Philippines, the effective programs and initiatives in the environment sector, whether local or national, are seemingly those that bring people to the table and this is seen as a management advance.

Conflicts emerge with mining and the need for resolution. Coal mining as an energy strategy of the country “is driven more by politics, and technically, it is a sad situation we are in. The strategy seems to be to increase the baseline by having a lot of coal now, so that later when we are asked to reduce when all the international regulatories are issued, we have a lot in store. We do have a lot of carbon compared with other countries and we are getting all the coal-fired plants established as much as possible. But we have poor quality coal in the country and yet we seem to want to mine all the coal that we have now. The costs are not just in terms of carbon production, but also in land degradation.”

“So that is how we are playing the game now. It’s mine here, mine there, when we don’t even have to mine. There are so many other energy resources like geothermal and water, but we pay little attention to the more ecologically sound approaches.”

And for Jett, the worst case scenario is in not fully responding; it is a runaway situation if we do not adjust. Quoting from his paper, “climate change is no longer a simple scientific and environmental problem. . . and must straddle the worlds of the geosciences as well

as those of global economics and geopolitics. . . Reducing carbon emissions in a particular place will not result in direct local climate benefit to that place. Solving climate change is not the same as cleaning up a river or conserving topsoil.”

Jett also worries that we are also not seeing the feedback from the oceans. “The oceans are big and they haven’t done yet what we fear. There have been warnings. There are still some areas that are warm in the ocean and the cold areas are keeping the balance, so that’s what been happening.”

Jett sees that in the Philippines, “there are changes on the ground but at the national level, this issue is still taking a backseat. We started with the negotiations early on, and we do have the resources and the technology, but the question is what will it take for us to make the shift?”

With almost all Philippine forests degraded or gone, and water resources at critical stages, the contest between energy and self-sufficiency, the political and economic styles and set-ups are out of sync with the needed leadership and assistance in facing this common global challenge.

¹ *LIDAR is a remote sensing system used to collect topographic data.*

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