

## PROSPECT OF WILD PLANTS AND CULTIVATED PLANTS IN SERIBU ARCHIPELAGO DISTRICT

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*Abstrak, Penelitian dilakukan pada tahun 2005, di empat pulau Kepulauan Seribu yaitu P. Pari, P. Karya, P. Untung Jawa dan P. Tidung. Penelitian bertujuan untuk mengetahui jenis dan fungsi tumbuhan liar dan tumbuhan budidaya di Kepulauan Seribu. Pengumpulan data dilakukan dengan metode plot atau petak cuplikan. Pengukuran keanekaragaman tumbuhan menggunakan metode sampling. Tumbuhan liar terdapat di P. Pari, P. Karya, P. Untung Jawa dan P. Tidung. Tumbuhan liar ditemukan sebanyak 52 spesies, yang berguna sebagai bahan baku obat sekitar 60%; bahan baku insektisida sekitar 20%; bahan kayu bakar dan tanaman hias 4%, tanaman peneduh 8%; sebagai perabot rumah tangga 6%, sebagai makanan ternak 6%, penangkap ikan 6% dan yang belum diketahui kegunaannya 20%. Tanaman budidaya ada 22 jenis, terdapat di P. Pari, P. Karya, P. Untung Jawa dan P. Tidung, dan 60% diantaranya tanaman buah-buahan.*

*Kata Kunci . Tumbuhan Liar, Tumbuhan Budidaya, Keanekaragaman Tumbuhan*

### FOREWORD

Seribu archipelago is a group of small island which is administratively are still in the province of DKI Jakarta, but previously was in North Jakarta area. An administrative region that is comprised of two district Seribu Archipelago; Northern District Seribu Archipelago and Southern District. Given the Seribu Archipelago district of the newly created, then in the planning and execution of the program requires a data particularly in developing tourism.

Seribu Archipelago district have 110 island with a land area of 869.71 ha. Based on 2002 data, the total of 110 island, 70 island were lived 21.000 residents that 80 percent of the families as fishermen or fishing effort. Of the 70 inhabited island, 45 island as a recreational area, but the coachee is 26 island <sup>(1)</sup>. In 1998, due to the

monetary crisis, so far continues to be promoted as a recreational area is nine island. In 1998, it was introduced to local community effort, that is now becoming family business and managing by local family members.

Plants diversity, wild or cultivated, being one of biologic resources, where human gets benefit for daily use. Utilization of local plants in Seribu archipelago is not much known, only as fire log, household, and food. Seribu archipelago have much resources that have a potential to economic development because they have environmental endurance that support high productivity such as sea weeds, mangroves, and tourism area.

Local economic policy expected to capable to find source of economic development and living source that can enhance local net revenue and people

prosperity due to the rich resources possessed by district. Potential plants for raw medical ingredients is abundant in this district, if we are productive in processing and utilizing it, this plants will give big profit because pharmaceutical manufacturer will search for medical plants from Indonesia. Traditional medicine is natural and without side effect and safe to be used to keep healthy. Besides as medicine, plants in Seribu archipelago can be used as biologic insecticide that is safe, cheap, easy to get and environment friendly.

## RESEARCH LOCATION

Research conducted in four islands, which is Pari island, Karya island, Untung Jawa island, and Tidung island. Administratively, all the island are part of the Seribu archipelago district. From all island above, several island have beach forests and population settlements.

## RESEARCH METHODS

Data was collected by using plot method. Plant diversity measuring is done by using quantitative method <sup>(2)</sup> In each location (island), a plot is made with 10 x 100 m size or 20 m x 50 m (0,01 ha). In each plot, sub plot is made sized 10 m x 10 m (for tree), 5 m x 5 m (for stalke, clump, bushes), 1 m x 1 m (for herb). Individual sum is counted for every species (except for herb, researchers only estimate coverage area). Every species of plants found was noted it's local name, and traditional usage, also fresh collection and herbarium was made.

## RESULT AND DISCUSSION

### 1. Pari Island

Naturally, Pari island only have one type of vegetation, which is beach forest. Population settlements are mostly sea weed farmers. Plants that dominated in beach forest is bakung (*Crinum americana*), nyamplung (*Calophyllum inophyllum*), ketapang (*Terminalia catappa*), and kangkung pantai (*Ipomoea longiflora*). In Pari island, sukun (*Artocarpus communis*) is abundance, besides that cultivated plant such as jambu biji (*Psidium guajava* L.), jambu air (*Syzigium aqueum*), jeruk (*Citrus reticulata* Blanco), sawo (*Archas zapota* L.) and delima (*Punica granatum*) were found.

### 2. Karya Island

Karya island consists of beach forest vegetation and population settlements. This island is dominated by tapak dara (*Catharantus roseus*), nyamplung (*Callophyllum inophyllum*) and koreak (*Allophylus cobe*). Cultivated plants that grow in this island are pepaya (*Carica papaya*), pisang (*Musa paradisiaca*), and singkong (*Manihot utilissima*).

### 3. Untung Jawa Island

Naturally, this area has 3 kinds of forest vegetation, which is mangroves, beach forest, and bush forest. Beach forest is dominated by rumput bulu babi (*Spinifex littoreus*), oyot-oyotan (*Ipomoea prescaprae*), legundi (*Vitex trifolia*), mengkudu (*Morinda citrifolia*), and waru laut (*Thespesia populnea*). Mangroves are dominated by bakau (*Rhizophora mucronata*), pepasiran (*Lumnitzera littorale*), buta-butua (*Exoecaria agallocha*), and api-api (*Avicennia marina*). Bush forest is dominated by *Turnera ulmifolia*, Tapak dara (*Catharantus roseus*), *Stachytarpetta jamaicensis*, and kedondong laki (*Lansea coromandelica*). Population and utilization of wild plants in Untung Jawa island can be seen in Table 1.

#### 4. Tidung Island

Like Pari, Karya, and Untung Jawa island, Tidung island has population settlements that mostly consist of fisherman. Naturally, this island only has one type of vegetation, beach forest. Beach forest in this location borders coconut forests. Plants that dominated this area is rumput (*Ischaemum muticum*), tapak dara (*Catharanthus roseus*), pandan duri (*Pandanus tectorius*), kayu angin (*Casuarina equisetifolia*), kendeke (*Premna*

*serratifolia*) and jejambu (*Scaveola taccada*). Tidung island has cultivated plants such as coconut (*Cocos nucifera* L.), jeruk (*Citrus reticulata* Blanco), nangka (*Artocarpus heterophyllus* Lamk), sukun (*Artocarpus altilis*) (Table 3). Population and utilization of wild plants in Tidung island can be seen in Table 1. Table 1 showed the species, habitus, local name, location of the research area and sum of the wild plants in individual species of a plot in each location research area.

**Table 1. List of collected plants in various forest vegetation in Pari, Karya, Untung Jawa and Tidung island.**

Family/Species	Habitus	Local name	Location				Sum of individual in 0,01 ha			
			P	KA	UJ	T	P	KA	UJ	T
<i>Acanthaceae</i>										
<i>Avicenia marina</i> (Forsk.) Vierh	P	Api-api	+	-	+	-	4	-	7	-
<i>Amaryllidaceae</i>										
<i>Crinum asiaticum</i> L.	S	Bakung	-	-	-	+	4	-	-	3
<i>Anacardiaceae</i>										
<i>Lansea coromandelica</i> (Houtt.) Merr	P	Kedondong Laki	+	-	+	+	9	-	5	2
<i>Poaceae</i>										
<i>Catharanthus roseus</i> (L.) G.Don	S	Tapak dara	+	+	+	+	30	15	80	20
<i>Ochrosia oppositifolia</i> (Lamk) K.Schum	P	Songgo Langit	+	-	-	-	2	-	-	-
<i>Asclepiadaceae</i>										
<i>Calotropis gigantea</i> (Wild.) Dryand ex Ait	Pd	Biduri	-	-	+	-	-	-	10	-
<i>Dischidia</i> sp	H	Daun Karpo	-	-	+	-	-	-	4	-
<i>Asteraceae</i>										
<i>Porophyllum ruderale</i>	H	-	-	-	-	+	-	-	-	3
<i>Wedelia biflora</i> (L.) DC	S	-	+	-	-	+	5	-	-	4
<i>Caricaceae</i>										
<i>Carica papaya</i> L	P	Pepaya	+	-	-	-	7	6	-	-
<i>Casuarinaceae</i>										
<i>Casuarina equisetifolia</i>	P	Cemara/	+	-	-	+	3	-	-	10

J.R.G.Forst.		kayu angina								
Family/Species	Habitus	Local name	Location				Sum of individual in 0,01 ha			
			P	KA	UJ	T	P	KA	UJ	T
<i>Clusiaceae</i>										
<i>Calophyllum inophyllum</i> L.	P	Nyamplung	+	+	-	+	10	7	-	7
<i>Combretaceae</i>										
<i>Lumnitzera littorale</i>	P	Pepasiran	-	-	+	-	-	-	21	-
<i>Terminalia catapa</i> L.	P	Ketapang	+	+	-	+	15	7	-	3
<i>Convolvulaceae</i>										
<i>Ipomoea longiflora</i> R.Br	H	Kangkung Pantai	+	-	-	+	-	-	-	-
<i>Ipescaprae</i> (L.) R.Br.	H	Oyot-oyotan	+	-	+	-	-	-	-	-
<i>Cythraceae</i>										
<i>Pemphis acidula</i> Forst	P	Sentigi	-	-	+	-	-	-	2	-
<i>Cyperaceae</i>										
<i>Fimbristylis dichotoma</i> Vahl	H	Mendong	-	-	+	+	-	-	-	-
<i>Ebenaceae</i>										
<i>Diospyros maritime</i> Blume	P	Kayu hitam	+	-	+	-	4	-	2	-
<i>Euphorbiaceae</i>										
<i>Brevnia virgata</i> (Kurt.ex T.& B.) M.A.	Pd	Cipiring	+	+	-	+	7	4	-	1
<i>Excoecaria agallocha</i> L.	P	Buta-buta	-	-	+	-	-	-	13	-
<i>Fabaceae</i>										
<i>Canavalia ensiformis</i> (L.) DC.	L	-	-	-	-	+	-	-	-	3
<i>Crotalaria incana</i>	S	Orok-orok	-	-	+	-	-	-	5	-
<i>Dendrolobium umbellatum</i> (L.) Benth	P	Rogo-rogo	-	-	-	+	-	-	-	7
<i>Indigofera sumatrana</i>	S	Tarum	-	-	+	-	-	-	5	-
<i>Pongamia pinnata</i> (L.) Pierre	P	-	+	+	-	+	15	4	-	3
<i>Goodeniaceae</i>										
<i>Scuevola taccada</i> (Gaertn.) Roxb.	Pd	Jejambu	+	-	+	+	9	-	5	19
<i>Gnetaceae</i>										
<i>Gnetum gnemon</i> L.	P	Mlinjo	+	-	-	+	1	-	-	2
<i>Lauraceae</i>										
<i>Cuscuta australis</i> R.Br.	Pr	Jala-jala	+	+	+	+	-	-	-	-
<i>Lamiaceae</i>										
<i>Leucas lavendulifolia</i>	S	Paci-paci	-	-	+	-	-	-	7	-
<i>Malvaceae</i>										
<i>Thespesia populnea</i> (L.) Soland ex Corres	P	Waru Laut	+	+	+	+	6	4	25	1

Family/Species	Habitus	Local name	Location				Sum of individual in 0,01 ha			
			P	KA	UJ	T	P	KA	UJ	T
<i>Meliaceae</i>										
<i>Melia azedarach</i> L.	P	Mindi	+	-	-	-	7	-	-	-
<i>Moraceae</i>										
<i>Ficus superba</i> Miq.	P	Kresek	+	+	-	-	5	3	-	-
<i>Pandanaceae</i>										
<i>Pandanus tectorius</i> Soland. ex Park.	P	Pandan duri	-	-	-	+	-	-	-	19
<i>Piperaceae</i>										
<i>Piper caninum</i> Blume	L	Cabe Jawa	+	-	-	-	4	-	-	-
<i>Poaceae</i>										
<i>Imperata cylindrica</i> Beauv	H	Alang-alang	+	+	-	+	-	-	-	-
<i>Ischaemum muticum</i> L.	H	Rumput teki	-	+	-	+	-	-	-	-
<i>Spinifex littoreus</i> (Burm.) Merr.	H	Bulu Babi	-	+	+	-	-	-	-	-
<i>Rhizophoraceae</i>										
<i>R. mucronata</i> Lam.	P	Bakau	-	-	+	-	-	-	21	-
<i>Gnettarda speciosa</i> L.	P	Bisoro	-	-	-	+	-	-	-	2
<i>Morinda citrifolia</i> L.	Pd	Mengkudu	+	-	+	-	8	-	19	-
<i>Rutaceae</i>										
<i>Triphasia trifolia</i> (Burm.f.) Wils.	Pd	Jeruk Kingkit	-	-	-	+	-	-	-	2
<i>Sapindaceae</i>										
<i>Allophyllus cobe</i> (L.) Raensch.	P	Koreak	-	+	-	-	-	6	-	-
<i>Dodonaea viscosa</i> Jacq.	P	Cengkeh Laut	+	-	-	+	4	-	-	2
<i>Taceaceae</i>										
<i>Tacca leontopetaloides</i> (L.) O.K.	H	Keladi/ Kacondang	+	-	-	+	4	-	-	3
<i>Turneraceae</i>										
<i>Turnera ulmifolia</i> L.	S	-	-	-	+	+	-	-	62	10
<i>Verbenaceae</i>										
<i>Clerodendrum inerme</i> (L.) Gaertn.	S	Ubi dara/ Melati hutan	+	-	-	+	10	-	-	6
<i>Lantana camara</i> L.	S	Pletokan/ Tembelekan	-	-	+	+	-	-	5	2
<i>Premna serratifolia</i> L.	P	Kendeka	-	-	+	+	-	-	3	9
<i>Stachytarpheta jamaicensis</i> (L.) Vahl.	S	-	+	+	+	+	4	2	12	8
<i>Vitex trifolia</i>	Pd	Legundi	+	-	+	-	5	-	50	-
<i>Viscaceae</i>										
<i>Viscum ovalifolium</i> DC.	Pr	Benalu	+	+	+	-	-	-	-	-

P= Pari island

T= Tidung island

P= tree

Pd=Clump

S= bush H= Herb L=Liana

KA=Karya island

- = not found

Pr=Paracites

UJ= Untung Jawa island

+ = found

**Table 2. Value of use and utilization of collected plants in Pari, Karya, Untung Jawa, and Tidung island.**

Family/Species	Local Name	Value of use
<i>Acunthaceae</i> <i>Avicenia marina</i> (Forsk.) Vierh.	Api-api	Herbal plant and insecticida raw material
<i>Amaryllidaceae</i> <i>Crinum asiaticum</i> L.	Bakung	Herbal plant and insecticida raw material
<i>Anacardiaceae</i> <i>Lannea coromandelica</i> (Houtt.) Merr.	Kedondong Laki	Herbal plant and fire wood
<i>Apocynaceae</i> <i>Catharanthus roseus</i> (L.) G. Don	Tapak dara	Herbal plant and insecticida raw material
<i>Ochrosia oppositifolia</i> (Lamk.) K. Schum.	Songgo Langit	Herbal plant
<i>Asclepiadaceae</i> <i>Calotropis gigantea</i> Dryand ex Ait	Biduri	Herbal plant and insecticida (Willd.) raw material
<i>Dischidia</i> sp	Daun Karpo	Raw vegetable, vegetable and animal feed
<i>Asteraceae</i> <i>Porophyllum ruderale</i>	-	-
<i>Wedelia biflora</i> (L.) DC	-	-
<i>Caricaceae</i> <i>Carica papaya</i> L.	Pepaya	Herbal plant, animal feed and vegetable
<i>Casuarinaceae</i> <i>Casuarina equisetifolia</i> J.R. G. Forst.	Cemara	Herbal plant, insecticida raw material and fire wood
<i>Clusiaceae</i> <i>Calophyllum inophyllum</i> L.	Nyamplung	Herbal plant, insecticida raw material and fire wood
<i>Combretaceae</i> <i>Lumnitzera littorale</i>	Pepasiran	Fish trap and fire wood
<i>Terminalia catapa</i> L.	Ketapang	Shading plant, herbal plant and insecticida raw material
<i>Convolvulaceae</i> <i>Ipomoea longiflora</i> R.Br.	Kangkung pantai	Herbal plant
<i>Ipescaprae</i> (L.) R.Br.	Oyot-oyotan	Herbal plant
<i>Cythraceae</i> <i>Pemphis acidula</i> Forst	Sentigi	Herbal plant, furniture and fire wood
<i>Cyperaceae</i> <i>Fimbristylis dichotoma</i> Vahl.	Mendong	Animal feed
<i>Ebenaceae</i> <i>Diospyros maritime</i> Blume	Kayu Hitam	Herbal plant

Family/Species	Local Name	Value of use
<i>Euphorbiaceae</i>		
<i>Breynia virgata</i> (Kurt.ex T. & B.) M.A	Cipiring	-
<i>Excoecaria agallocha</i> L.	Buta-buta	Herbal plant and neutralize poisoning
<i>Fabaceae</i>		
<i>Canavalia ensiformis</i> (L.)DC.	Orok-orok	Green manure/fertilizer
<i>Crotalaria incana</i>	Rogo-rogo	Shading plant
<i>Dendrolobium umbellatum</i> (L.) Benth.	Tarum	-
<i>Indigofera sumatrana</i>	Bangkong	Fire Wood
<i>Pongamia pinnata</i> (L.) Pierre	-	-
<i>Goodeniaceae</i>		
<i>Scavevola taccuda</i> (Gaertn.) Roxb.	-	-
<i>Gnetaceae</i>		
<i>Gnetum gnemon</i> L.	Mlinjo	Vegetable and Fire wood
<i>Lauraceae</i>		
<i>Cuscuta australis</i> R.Br.	Jala-jala	Herbal Plant
<i>Lamiaceae</i>		
<i>Leucas lavendulifolia</i>	Paci-paci	Raw vegetable and animal feed
<i>Malvaceae</i>		
<i>Thespesia populnea</i> (L.) Soland ex Corres	Waru laut	Herbal plant, for making canoe raw material and fire wood
<i>Meliaceae</i>		
<i>Melia azedarach</i> L.	Mindi	Herbal plant, insecticida raw material
<i>Moraceae</i>		
<i>Ficus superba</i> Miq.	Kresek	Insecticida raw material and fire wood
<i>Pandanaceae</i>		
<i>Pandanus tectorius</i> Soland.ex Park.	Pandan duri	Herbal plant and insecticida raw material
<i>Piperaceae</i>		
<i>Piper caninum</i> Blume	Cabe Jawa	Herbal plant and insecticida raw material
<i>Poaceae</i>		
<i>Imperata cylindrical</i> Beauv.	Alang-alang	Herbal plant
<i>Ischaemum muticum</i> L.	Suket timbangan	Herbal plant
<i>Spinifex littoreus</i> (Burm.) Merr.	Bulu babi	The flower for chasing away mice
<i>Rhizophoraceae</i>		
<i>R.micronata</i> Lam.	Bakau	Fish trap and fire wood
<i>Guetarda speciosa</i> L.	Bisoro	-
<i>Morinda citrifolia</i> L.	Mengkudu	Herbal plant
<i>Rutaceae</i>		
<i>Triphasia trifolia</i> (Burm.f.) Wills.	Jeruk kingkit	Ornamental and Herbal plant

Family/Species	Local Name	Value of use
<i>Sapindaceae</i>		
<i>Allophylus cobe</i> (L.) Raeusch.	Koreak	Shading plant
<i>Dodonaea viscosa</i> Jacq.	Cengkeh laut	Herbal plant
<i>Taceaceae</i>		
<i>Tacca leontopetaloides</i> (L.) O.K.	Keladi	The root can be eaten
<i>Turneraceae</i>		
<i>Turnera ulmifolia</i> L.	-	-
<i>Clerodendrum inerme</i> (L.) Gaertn.	Ubi dara/melati hutan	Herbal plant and insecticida raw material
<i>Lantana camara</i> L.	Pletokan	Herbal plant and insecticida raw material
<i>Premna serratifolia</i> L.	Kendeka	-
<i>Stachytarpheta jamaicensis</i> (L.) Vahl.	-	Herbal plant
<i>Vitex trifolia</i>	Legundi	Herbal plant and insecticida raw material
<i>Viscaceae</i>		
<i>Viscum ovalifolium</i> DC.	Benalu	Herbal plant

52 species of wild plants were recorded and potential as medical ingredients, insecticide, vegetable and cattle feed. Most of those wild plants utilized as medical ingredients is 60%, and insecticide raw material 20 %, fire log and ornamental plant 4%, shelter 8%, household 6%, cattle feed 6% fishnet 6%, and 20 % unknown. Twenty two cultivated species were found and many of them (60%) were fruit plants grown by people.

All of these plants can be cultivated as plant that have economic value in Seribu archipelago. These plants are; akar keladi (*Caesalpinia crista*), root can be used to cure calculus; nyamplung (*Callophyllum inophyllum* L) sap and bark for enterwind, joint problem (external use), gonorrhoea, and after delivering (internal use). Leaf immersed in water for eye sore (3); *Calotropis gigantea* (L.) Aiton f. (biduri), used to cure syphilis, sap for toothache and caries (8); *Cataranthus roseus* (L.) G. Don (tapak dara), stewed plant used to cure malaria, diarrhoea, diabetes, cancer, and dermal problem. Containing vindoline

(0.5%), serpentine, catarathine, apmalysine, aquammine, loclamerine, and tetrahydroalstonine (2); *Clerodendrum inerme* (L.) Gaertn (melati hutan). Seed used to cure stomache caused by sea fish consumption, root used to cure rheumatism (8); *Cuscuta australis* R.Br (jala-jala) for emmolien, sedative and sudoriphic, and tonic, also suppress urinary (3); *Dendrolobium umbellatum* (L.) benth (rogo-rogo) leaf tip used after delivering (8), *Dodonaea viscosa* jacq. (cengkeh laut), stewed leaf, fruit, bark and wood used to cure febrifuge (8); *Exoecaria agallocha* L. (buta-buta), poisoning plant (8); *Ipomoea pescaprae* (L.) R.Br (oyot-oyotan) stewed root used to cure irritation caused by infection (8); *Morinda citrifolia* L. (mengkudu), fruit for curing diabetes, beri-beri, asthma, cough, and respiratory problem (3); *Tacca leontopetaloides* (L.) O. Kuntze (iles-iles), starch from tuber can be eaten to cure dysentri, diarrhoea and sedem (3); *Viscum ovalifolium* DC. (manadeuh), leaf used to cure neuralgia (3); *Vitex trifolia*, L. (legundi) leaf used to cure rheumatic, bruise, and swollen, stewed root can be



**Table 3. List of cultivated plant in Seribu archipelago**

Species name	Local name	Family
<i>Artocarpus altilis</i> (Parkinson) Fosberg.	Sukun	Moraceae
<i>Mangifera indica</i> L.	Mangga	Anacardiaceae
<i>Annona squamosa</i> L.	Srikaya	Annonaceae
<i>Carica papaya</i> L.	Pepaya	Caricaceae
<i>Musa paradisiaca</i> L.	Pisang	Musaceae
<i>Psidium guajava</i> L.	Jambu biji	Myrtaceae
<i>Syzygium aqueum</i> (Burm.f.) Alston.	Jambu air	Myrtaceae
<i>Citrus reticulata</i> Blanco	Jeruk	Rutaceae
<i>Manihot utilisima</i>	Singkong	Euphorbiaceae
<i>Leucaena glauca</i>	Lamtoro	Fabaceae
<i>Gnetum gnemon</i> L.	Mlinjo	Gnetaceae
<i>Hibiscus tiliaceus</i> L.	Waru	Malvaceae
<i>Lanea coromandelica</i> (Houtt.) Merr.	Kedondong Laki	Anacardiaceae
<i>A. heterophyllus</i> Lamk.	Nangka	Moraceae
<i>Moringa oleraceae</i>	Kelor	Moringaceae
<i>Averrhoa carambola</i> L.	Belimbing	Oxalidaceae
<i>Punica granatum</i> L.	Delima	Punicaceae
<i>Cocos nucifera</i> L.	Kelapa	Arecaceae
<i>Achras zapota</i> L.	Sawo	Sapotaceae
<i>Nerium oleander</i>	Oleander	Apocynaceae
<i>Phyllanthus acidus</i> (L.) Skeels.	Cerme	Euphorbiaceae
<i>Delonix regia</i> (Boj.ex Hook.) Rafin	Flamboyan	Fabaceae

used for diaphoretic and diuretic (2); *Ischaemum muticum*, root containing saponin, flavonoid, and volatile oil, utilized to descent stomach stiff; *Ficus superba* L. (krasak) fruit and root contain saponin and alkaloids, fruit also containing tannin that can be utilized as medicine for abscess, rheumatic, wound, and antitoxic; *Pandanus amaryllifolius* Roxb (pandan), leaf contain saponin, alkaloids, flavonoids, tannin and polifenol utilized to enhance appetite, weak lust, and as cosmetic material; *Carica papaya* L. (pepaya) root, leaf and bark, contains alkaloids, saponin, flavonoids, polifenol, and seed contains saponin, utilized to cure digestive problem, also seed used to blacken hair; *Cassia tora* L.(ketepeng), leaf contain saponin, flavonoids, and polifenol, leaf as medicine for dermal problem, scabies, malaria; *Leucaena* L.(petai cina) leaf contain

alkaloids, saponin, flavonoids, and tannin, seed utilized as urine emetic and worm potion; *Moringa oleifera* Lamk (kelor) containing non-toxic alkaloids and saponin, root as cure for stiff, bleeding gums, irregular menstruation, headache, asthma, rheumatic, and beri-beri; *Glumiera acuminata* (kamboja) leaf and root contains saponin, flavonoids, polifenol, leaf contains alkaloids, sap can be used to cure abscess, genital disease, and dropsical; *Flemingia congesta* Roxb (orok-orok hutan), fruit, root and leaf contain saponin and polifenol, beside that, root and leaf also contain flavonoids, root can be used as potion for swollen at neck and abscess; Bakau (*Rhizophora mucronata*) abundant in Untung Jawa island, can be used as fishnet. Api-api (*Avicennia marina*) can be used as alternative control to overcome heavy

metal contamination in coastal area <sup>(3)</sup>. Heavy metal toxicity has chronic effect and only can be seen several year after accumulation of heavy metal inside organism.

In Table 3, we can know that almost all of these cultivated plants are fruit plant and begin to cultivate vegetable and ornamental plants. Several plants that are cultivated in Seribu archipelago are;

- a. Sukun (Genus *Artocarpus*) is favorite fruit from Seribu archipelago, this fruit usually found at Pari and Tidung island. Besides a delicious fruit, young fruit can be used to cure diabetic, by stewing it for 30 minutes and adding 3 glasses of water, stewed until 2 glasses.
- b. Mangga (*Mangifera indica* L.) is one of *Anacardiaceae* family. Seed, leaf, and trunk contains saponin neither seed nor bark. Mangga contains protein, fat, carbohydrate, calcium, phosphor, iron, vitamin A and riboflavin. Fruit leather can be used to cure cataract. Seed can be used as medicine against worms. 40-50 gram mangga seed, washed, minced, and stewed with 3 glasses of water until halved then drain and strain it. Solution was drank in the morning and afternoon in equal measurement.
- c. Srikaya (*Annona squamosa*). To find a good srikaya fruit is finding a dull green colored fruit, flashy leather, regular shape, outer thread distance is far, no stain in its leather, and no hole <sup>(4)</sup>. Srikaya fruit can be used to prevent cancer, and fenol inside it can be used as antioxidant.
- d. Pepaya (*Carica papaya* L.) from family *Caricaceae*. Leaf, seed, sap, and root can be used. Chemical composition in leaf is alkaloid such as; papaine, carpaine, pseudocarpaine, glycoside, carpocide, and saponin. Seed contains

carpaine and carisine. Sap contains papaine, papayatimine, and fitoclymase. Fruit contains carotenoids, pectin galactose, galacturonate acid. Seed utilization of pepaya (*Carica papaya* L.) as medicine against worm, abortion. Carpaine is alkaloid compound that can overcome heart attack, anti-amoeba and diuretic potion. Papaine was used in food drying and medical manufacture. Papaine can be used to smoothen meat, purifying beer, or thicking food, cleaning contact lens, strengthen bile work, so fat metabolism is increasing. Eating young pepaya fruit can lead to abortion <sup>(5)</sup>. Leaf can be used for excessive bilic acid, fever, amoebic dysentery, irregular menstruation, malaria, gaining appetite, stomachache, swollen (external use), abcess (external use), and as worm potion. Seed can be used for outgrowing lymph, worm potion, digestive problem, eczema (external use), acne (external use), burn wound (external use), and rheumatic, also joint stiff (external use). Root for calculus, medicine against worms, uteric infection, and joint stiff (external use). Sap cure diphteria (external use), wart (external use), and burn wound (external use). To cure diphteria, sap is added to warm water, and used to gargle. To cure bile disease, leaf stewed and use as vegetable soup. Sap used to cure wart by spreading it in wart and re-spread every 3 hours until the wart is gone.

- e. Pisang is fruit plant from South East Asia, Africa, South and Center America. Various kinds of pisang sold in the market are pisang ambon, pisang raja, pisang kepok, pisang susu, etc. This yellow fruit has various usage, from fruit, leaf, leather and trunk, can be used. Trunk can be processed to fabric for clothes, paper etc. Trunk also

can be used as cattlefood. Leather can be used to make vinegar. Pisang contains many nutrients such as; calcium, fat, potassium, vitamin, carbohydrate, and protein. Pisang can overcome anemia cause contains iron (Fe). Triphotanic acid that processed to serotonin can overcome stress and depression. B6 can regulate glucose in blood. Pisang contains much potassium, that can revive potassium in our body, and smoothening oxygen delivery to brain. For pregnant mother, folic acid contents in pisang, easy to absorbed by fetus and good for nerve system development in fetus. Ripe pisang have yellowish green leather, with yellow or brown spot. Ripe pisang is more easy to digest and fruit glucose easier to process become natural glucose, then changed as power source. It is good for body, muscle work, and good to eliminate exhaustion. Pisang kepok kuning is useful for diabetic patient as supplement.

- f. Leaf and trunk of jambu biji (*Psidium guajava* Linn.) contain saponin, flavonokla, and tannin, besides, leaf also contains volatile oil. Jambu fruit contain bioactive moleculer such as tannin, anacardiac acid, cardol, resorcinol. The compound can obstruct and kill bacteria and fungus <sup>6)</sup>. Jambu biji can be used to cure diarrhoea, and diuretic agent. For anti diarrhoea,  $\pm$  10 gr leaf is washed, pounded until fine, added 0,25 gr salt and half cup of warm water, then after cold, pressed and strained. Solution should be drunk all at once. Leaf and young fruit stewed is good for diabetic patient. Jambu fruit can be used to prevent sprue, puffed stomach, diabetic and strengthen the heart. Jambu juice can be given to these patients, but only as supplement to medical treatment.
- g. Jeruk (*Citrus sinensis* Linn.) containing bioactive compound such as; flavonoid/bioflavonoid, which is white layer in fruit leather, and taste bitter, useful for medicine. Iron can be used as antioxidant, whereas potassium can strengthen heart function. Phosphor can strengthen body metabolism <sup>7)</sup>.
- h. Singkong (*Manihot utilissima*) or also known as ketela pohon or ubi kayu, in English called cassava, is tropic and subtropic annual plant from *Euphorbiaceae*. Tuber is well known as main course, producing carbohydrate, and leaf as vegetables. Singkong tuber is energy source that is rich in carbohydrate, but poor in protein. Protein source is located at leaf, which contains amino acid methionine <sup>8)</sup>. Singkong is used in various of cooking. Stewed to replace potato and food complement flour can be used to replace wheat and good for allergic patient. Singkong contains water, energy, protein, fat, carbohydrate, fiber, vitamin A, B, C and E, and various kind of minerals.
- i. Nangka (*Artocarpus integra*), included in *Moraceae* family. Nangka leaf contains saponin, flavonoid, and tannin. Young fruit and root, containing polifenol. Leaf useful for smoothen mother's milk (ASI), and used to cure skin sores. To smoothen ASI,  $\pm$  25 gram fresh leaf washed and stewed with 2 glasses of water for 15 minutes. Then after cold, strained. Solution to be drunk 2 times, morning and afternoon in equal measure.
- j. Kelor is clump with height untill 10 m, has a soft and brittle trunk, with leaf as big as fingertips oval shaped, and compound arranged. This plant, flowering all the year colored white, fruit shaped triangle with 30 cm width.

Grows fertile in lowland until 700 m from sea. As plants with medical usage, this plant, starting from its root, trunk, leaf and seed, well known in rural environment. Root with papaya leather, then pounded, used widely as external use (ointment) for beri-beri. Leaf with betel vine also used as ointment for ringworm. Kelor leaf contains pterygospermine that stimulate derm. It usually used as ointment, that warm up and curing body component weakness like arm or legs. If fresh, leaf are pounded and anointed at weak part of body. It can decrease pain because analgesic characteristic<sup>9)</sup>. Beside that, kelor leaf is used to smoothen ASI. To smoothen ASI, a nursing mother is advised to eat cooked kelor leaf. Kelor seed is used to overcome vomiting. Ripe and dry seed containing more concentrated pterygospermine, have germicide characteristic. Kelor fruit, contain morongiona alkaloids, that stimulate digestive system. This fruit usually cooked as delicious soup. Pounded leaf, can be used as talc or mixed, with talc can reduce black spots in face.

k. Delima (*Punica granatum*) from Punicaceae family, is fruit plants that can grow until 5-8 m. This plant probably comes from Iran, but cultivated long ago in mediteranian area. Moorish give a name of an old town, Granada, in Spain, by this fruinn name, this plant also cultivated in South China and South East Asia. Delima merah flower colored old red and compound. Young fruit color is reddish green, but changed to brownish red. Color of the fruit flesh is clear red, and taste sweet. Delima putih flower is whitish, fruit color yellowish green, seed granule looks shiny, like reddish white pearl, and taste sweet and a little

astrigent. Delima hitam flower is orange. Fruit color is rotten black when young and changed to reddish black when ripe. Fruit flesh colored pink, and taste sweet. Delima useful for pektay, slender look, sprue, vomiting, worm medicine and cancer.

- l. Kelapa (*Cocos nucifera*) from family caceae. Part of Kelapa that used is root, young fruit (bluluk), young fruit water, and young fruit flesh. Chemical compound in fruit flesh is fatty oil. Protein, saccarose, catalase, oxydase, diastase volatile oil, lechitin, stigmastenin, fitostenin, choline, vitamin A, B, and E and andekanoat acid. Kelapa water containing glucose (young fruit), saccharose (ripe fruit), minerals and enzymes, oxydase and catalase. Root is used for haemostatic, antipyretic and diuretic. Fruit flesh are laxative and water for diuretic.
- m. Sawo (*Achras zapota*) is plant with long life came from tropic area. This plant probably come from Guatemala, Mexico, and West India. Ripe sawo fruit, eaten fresh, but sap flavour is usually cling on the mouth. Ripe fruit can be processed as drink, or for ice cream mixture, but not used commercially. Wood is not very good for building material, but usually used for carving especially wood from sawo kecil that usually expensive. Wood from sawo plant is also not good as fire log. Generally, sawo is mostly reproduced with oculation or shooting, with lower trunk from tender plant. Tender plant can be oculated after 2 years.
- n. Cermai known as *Phyllanthus acidus*, is plant if processed with good, can give many profit. Besides used as medical plants, cermai fruit can give business opportunity by processing it into

sweetie or saltie. Seed can cure asthma, and tips can be used as cancer medicine and body slender by drinking stewed leaf with water.

## CONCLUSIONS

Several plants in Seribu archipelago that potential as medical ingredients, insecticide, and healthy food and drink source. So, if that biological resource can be managed well, it will give vocation, increase prosperity and local net gain. *Avicennia marina* (api-api) and *Rhizophora mucronata* (bakau) playing role in reducing contamination of heavy metal which is danger to health. These plants could be cultivated through coastal area with sufficient ground requirements for its growth. So heavy metal contamination problem in Seribu archipelago can be overcome.

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## REFERENCES

1. BapeKab. Kepulauan Seribu. "Kabupaten Administrasi Kepulauan Seribu 2003", Data Saku Pemerintahan Kabupaten Administrasi Kepulauan Seribu. Badan Perencanaan Kabupaten (BAPEKAB) Kep.Seribu. 2003. 75 hal
2. Partomihardjo, T dan J.S Rahajoe. Pengumpulan Data Ekologi Tumbuhan. Pedoman Pengumpulan Data Keanekaragaman Flora. Pusat Penelitian Biologi, Bogor. 2004
3. Daru Setyo Rini. Mangrove Jenis Api-api (*Avicennia marina*) Alternatif Pengendalian Pencemaran Logam Berat Pesisir. Lembaga Kajian Ekologi dan Konservasi Lahan Basah. Surabaya. 2001
4. Sunaryono. Ilmu produksi tanaman buah-buahan. Sinar Baru, Bandung. 1978
5. Abdon, A.C. Food composition tables recommended for use in the Phillipnes. 5<sup>th</sup> revised edition, Food and Nutrition Research Institute, Manila. 1980
6. Moncur. W.M. Floral development of tropical and subtropical fruit and nut species. An atlas of scanning electron micrographs. Natural resources series. No.8. 1988
7. Reuther, W., Webber, H.J. and L.D. Barcheloc. The Citrus Industry revised editor. Vol. IV. University of California, Division of Agricultural Science. 1978
8. Depkes. Inventaris Tanaman Obat Indonesia. Badan Litbangkes, Jakarta. 1999
9. De Padua, L.S., N. Bunyaphatsara and R.H.M.J. Lemmens (eds.). Medicinal and Poisonous Plants 1. PROSEA, Backhuys Publisher Plant. Leiden. 1999
10. De Padua, L.S., N. 1999. Bunyaphatsara and R.H.M.J. Lemmens (eds.).
11. Medicinal and Poisonous Plants 1. PROSEA, Backhuys Publisher Plant, Leiden