



Ending Open Burning

A Circular Economy Case Study from the Southern Maldives



The Republic of the Maldives



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Soneva
NAMOONA





Empowered Zero Waste Communities across the Maldives

reduce

Encouraging alternatives to
single use plastics

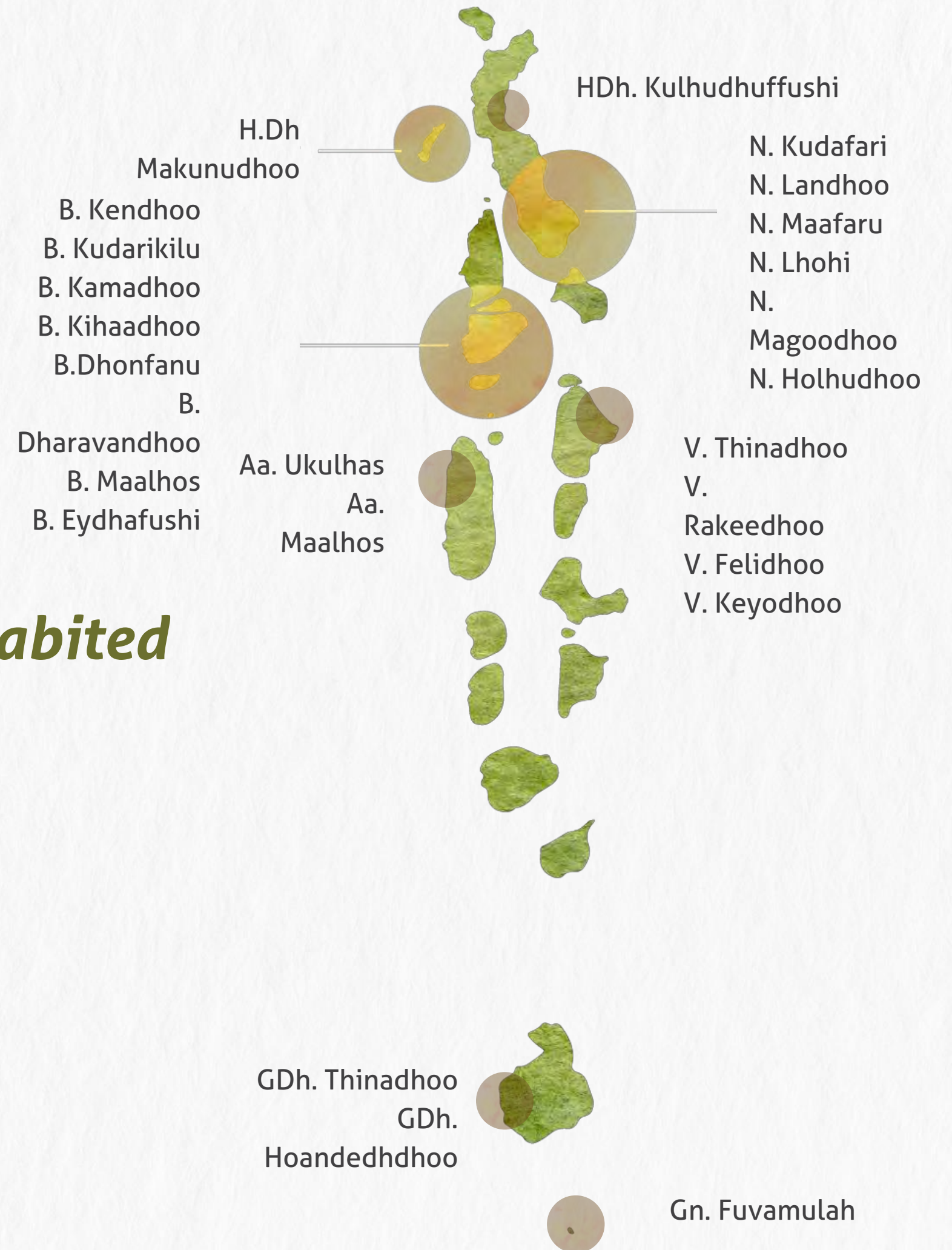
recycle

Co-creating zero waste
solutions for every island

inspire

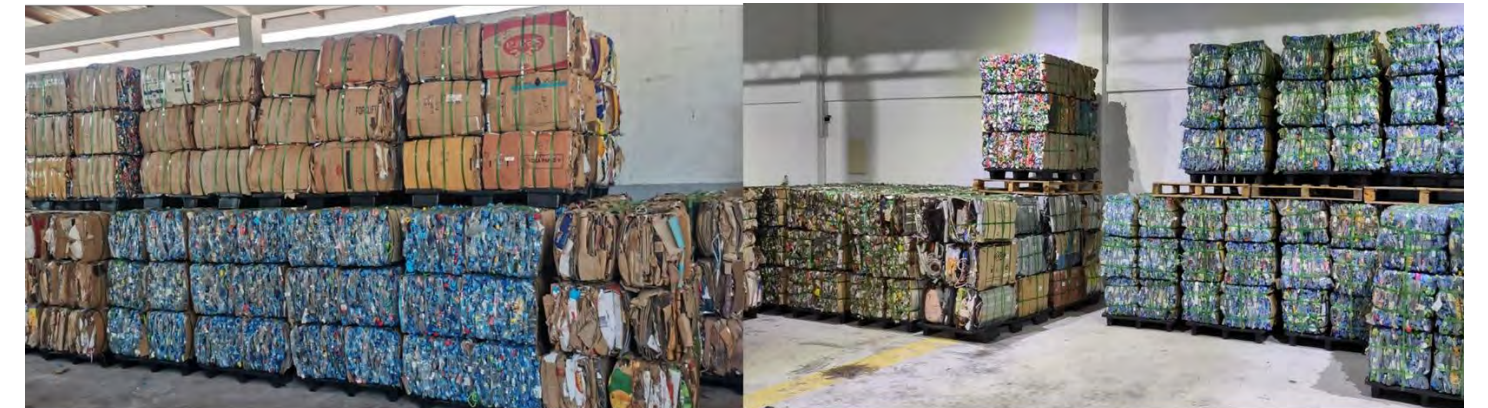
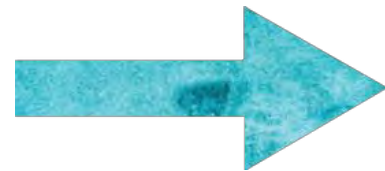
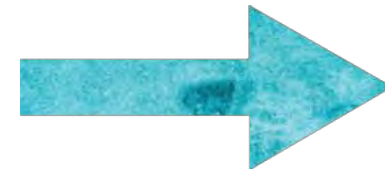
Nurturing communities of
environmental stewards

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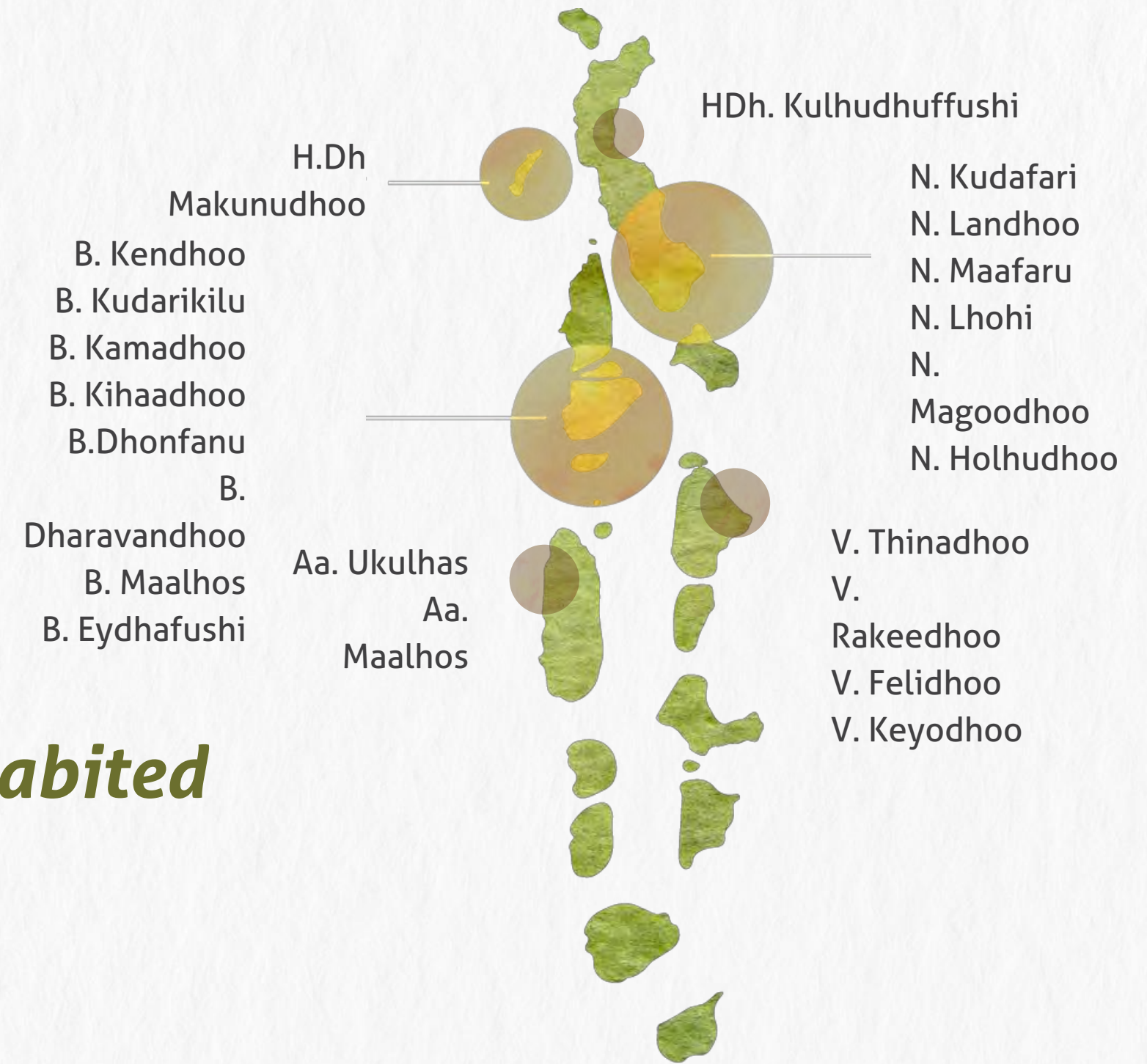


Soneva Namoonna works with 25+ inhabited islands

Transforming Island Waste Management through a series of engagements to empower local stakeholders



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Soneva Namoonna works with 25+ inhabited islands









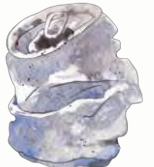
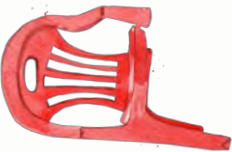













Island Waste Audit

Collect data on waste generation, segregation, and disposal practices

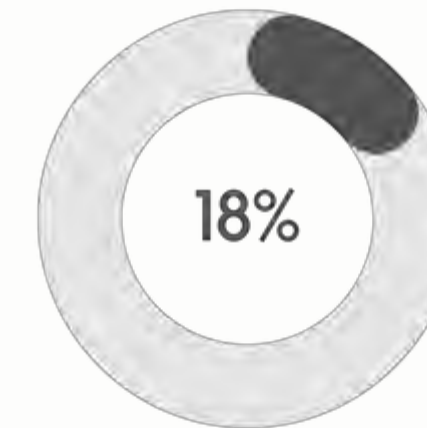


Waste breakdown: Non-organic

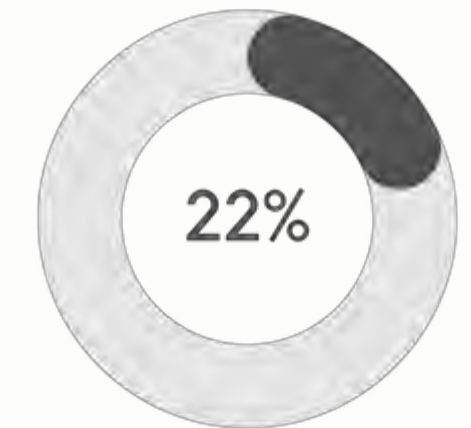
NON-ORGANIC

	Nappies 272 kg per day 1,903 kg per week		Colour Plastic 23 kg per day 163 kg per week		Tetra Paks 10 kg per day 72 kg per week
	Metal (Tins, etc.) 53 kg per day 369 kg per week		Thin Plastic 60 kg per day 421 kg per week		Clothes/Fabric 76 kg per day 529 kg per week
	Metal (Aluminium) 7 kg per day 51 kg per week		Bulky Plastic 12 kg per day 85 kg per week		Shoes 25g per day 177 kg per week
	Bulky Metal 103 kg per day 718 kg per week		Styrofoam (EPS) 2 kg per day 15 kg per week		E-Waste 77 kg per day 542 kg per week
	Glass 65 kg per day 455 kg per week		Cardboard 123 kg per day 859 kg per week		Fibreglass 0 kg per day 0 kg per week
	PET/Water Bottles 101 kg per day 705 kg per week		Paper 36 kg per day 252 kg per week		Medical Waste 56 kg per day 390 kg per week
	Construction Waste 0 kg per day 0 kg per week (not recorded)		Expired Items 0g per day 0 kg per week		Furniture 62 kg per day 435 kg per week

FROM ALL NON-ORGANIC WASTE...

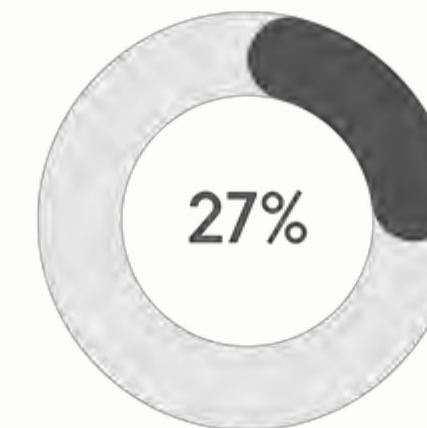


PLASTIC WASTE

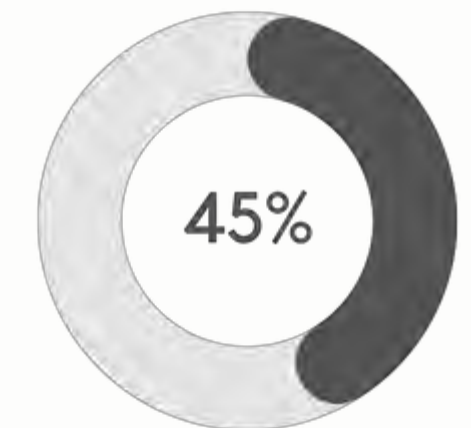


NAPPIES

FROM ALL PLASTIC WASTE...

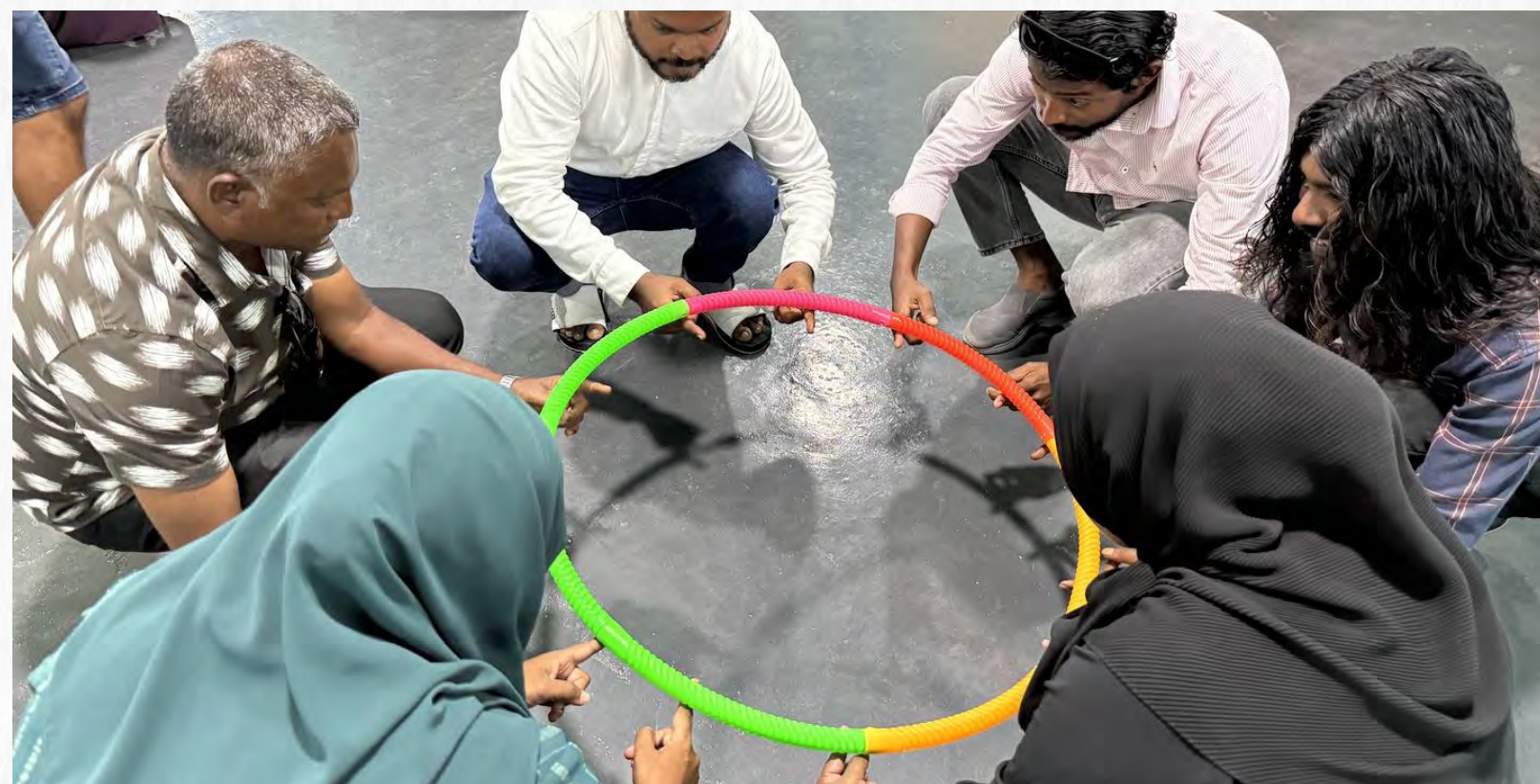
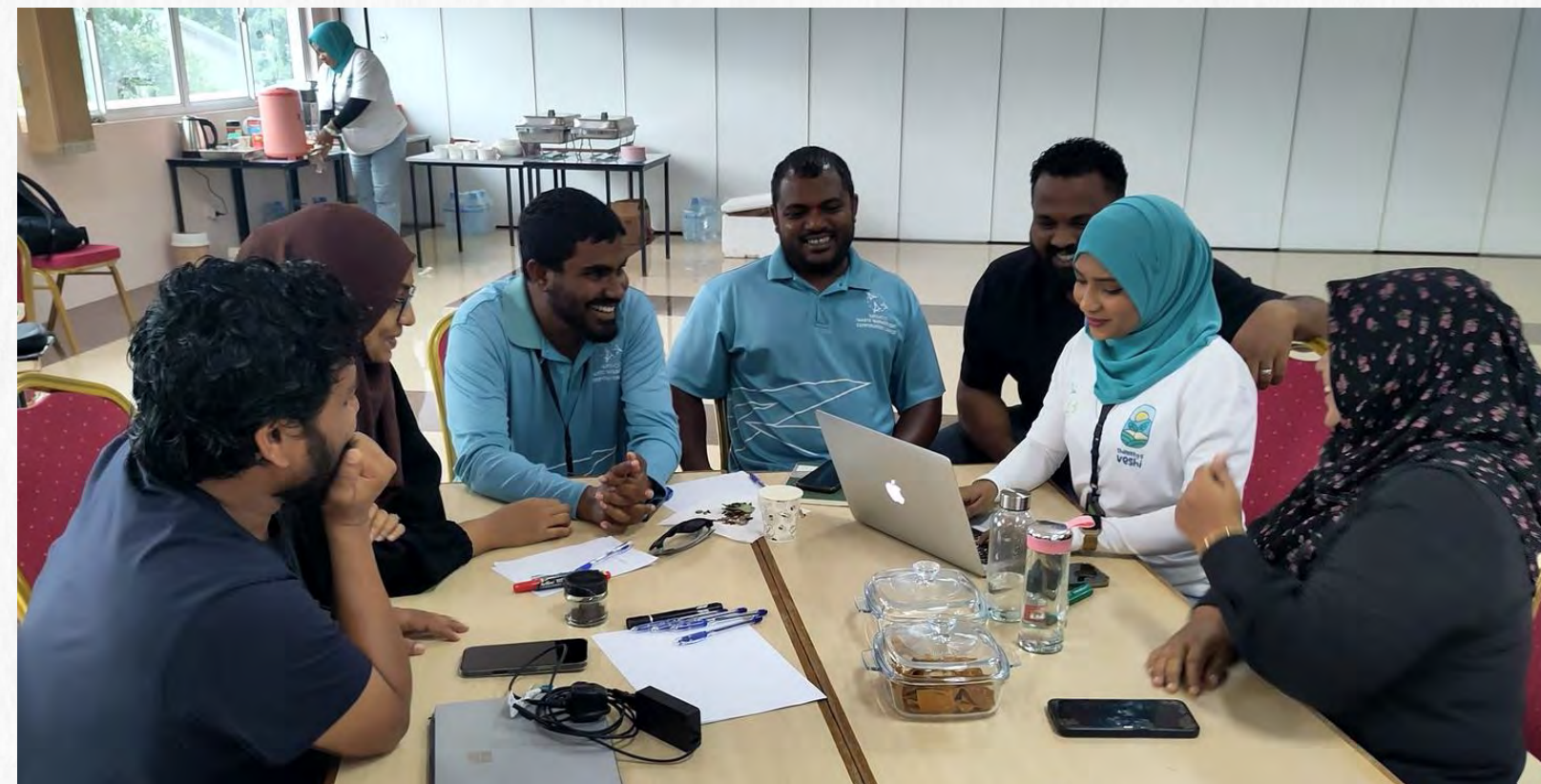


THIN PLASTIC



PET PLASTIC



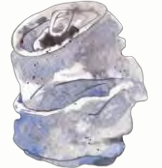









Namoona Changemaker Workshop



Using 2 compactors - baling will reduce volume by 10-20 times

NON-ORGANIC



	Metal (Tins, etc.) 53 kg per day 369 kg per week	→	 9 bales per week
	Metal (Aluminium) 7 kg per day 51 kg per week	→	 2 bales per week
	Bulky Metal 103 kg per day 718 kg per week	→	 1 2 bales per week
	Cardboard 123 kg per day 859 kg per week	→	 2 5 bales per week
	Paper 36 kg per day 252 kg per week	→	 6 bales per week
	Tetra Paks 10 kg per day 72 kg per week	→	 2 bales per week

	PET/Water Bottles 101 kg per day 705 kg per week	→	 2 7 bales per week
	Colour Plastic 23 kg per day 163 kg per week	→	 6 bales per week
	Bulky Plastic 12 kg per day 85 kg per week	→	 2 bales per week
	Thin Plastic 60 kg per day 421 kg per week	→	 1 3 bales per week
	Clothes/Fabric 76 kg per day 529 kg per week	→	 1 4 bales per week
	Shoes 25g per day 177 kg per week	→	 5 bales per week

Total: 123 bales per week running 2 compactors full time

Waste Management Centre Setup and Operations

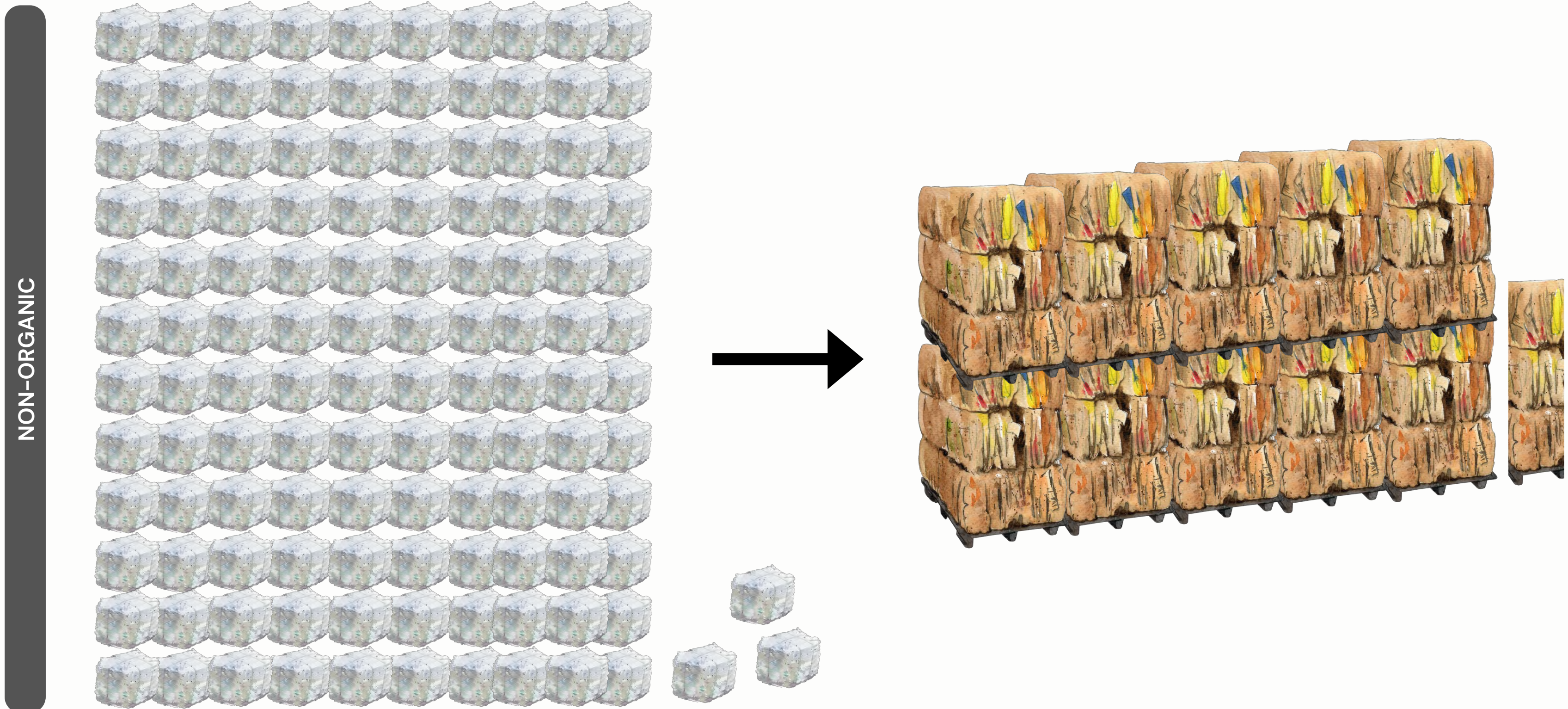
Machine Installation, staff training in operations and secondary segregation



Learnings from 30 different waste collections



Palletising bales will ease storage and logistics



Total: 123 bales per week = 10.25 pallets per week

Palletising for efficiency



Comparative Analysis of waste collection options



Gaafu Alifu		Recyclables			Non-recyclables			Nappies		All waste combined		
		Jumbos/mth	Bales/mth	Pallets/mth	Jumbos/mth	Bales/mth	Pallets/mth	Sacks/mth	Pallets/mth	Jumbos/mth	Bales/mth	Pallets/mth
Atoll	Route order											
S	Hithadhoo											
GA	Kanduhulhudhoo	58	51	4	37	40	3	83	4	99	140	11.8
GA	Gemanafushi	123	109	9	78	84	7	176	9	210	299	25.1
GA	Kodey	31	27	2	19	21	2	44	2	52	74	6.2
GA	Dhaandhoo	97	86	7	62	67	6	139	7	166	237	19.9
GA	Nilandhoo	51	45	4	32	35	3	73	4	87	124	10.4
GA	Maamendhoo	112	99	8	71	77	6	160	8	191	272	22.9
GA	Viligili	271	240	20	172	186	15	387	19	462	657	55.2
GA	Kolamaafushi	59	53	4	38	41	3	85	4	101	144	12.1
GA	Dhevvadhoo	56	50	4	36	38	3	80	4	95	136	11.4
S	Hithadhoo											
	Totals	858	760	65	545	588	49	1225	61	1464	2083	175
	Monthly collections (no.)											
	By supply dhoani	9.53	0.76	0.52	6.05	0.59	0.40	0.31	0.49	16.26	2.08	1.41
	By landing craft	6.35	0.51	0.35	4.03	0.39	0.26	0.20	0.33	10.84	1.39	0.94
	Monthly diesel consumption (L/month)											
	By supply dhoani	10,687	852	585	6,785	660	443	343	554	18,235	2,336	1,582
	By landing craft	14,249	1,136	780	9,047	879	591	458	738	24,313	3,114	2,110
	Monthly fuel cost (USD/month)											
	By supply dhoani	\$ 9,650	\$ 769	\$ 529	\$ 6,127	\$ 596	\$ 400	\$ 310	\$ 500	\$ 16,466	\$ 2,109	\$ 1,429
	By landing craft	\$ 12,867	\$ 1,026	\$ 705	\$ 8,169	\$ 794	\$ 534	\$ 413	\$ 667	\$ 21,955	\$ 2,812	\$ 1,905
	Monthly GHG emissions (kg CO2/month)											
	By supply dhoani	27,967	2,229	1,532	17,757	1,726	1,160	899	1,449	47,721	6,112	4,141
	By landing craft	37,289	2,972	2,042	23,676	2,302	1,547	1,198	1,933	63,628	8,150	5,522

Comparative Analysis of waste collection options



Conclusions:

Collection trips per month

	Jumbo bags	Bales	Pallets
Supply Dhoani	60	7.8	5.3
Landing Craft	40	5.2	3.5

8x reduction 32% reduction

Fuel cost per month

	Jumbo bags	Bales	Pallets
Supply Dhoani	\$43k	\$5.5k	\$3.8k
Landing Craft	\$57k	\$7.4k	\$5k

