West Papua
Sustainable Development
Planning

NDC WEST PAPUA 2030 FROM FORESTRY AND LAND-BASED SECTOR-LTS LCCR 2050

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INTRODUCTION:

Strengths

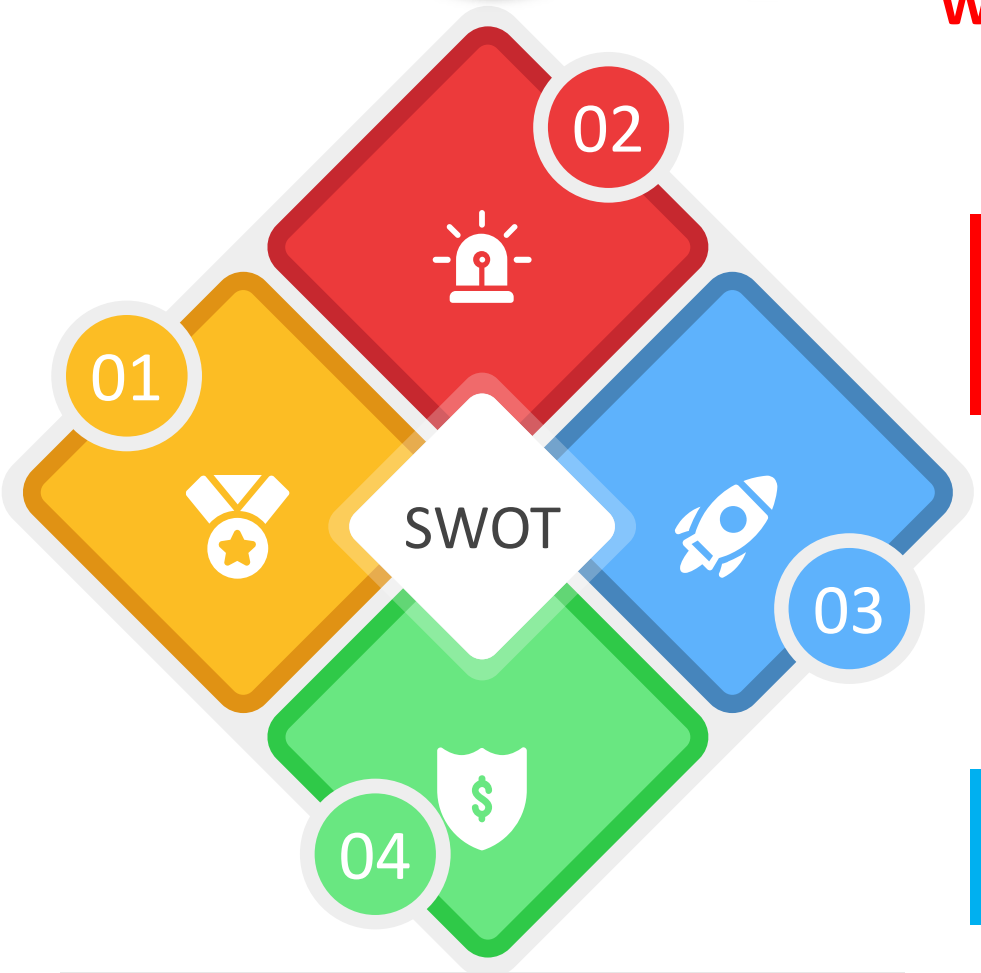
Mega-biodiversity in Sahul Shelf

West Papua still mantains forest area up to 88% and conserves its forest in a area of 70% + Papua's Bird's Head Seascape (BHS) is a mega-biodiversity located in the Coral Triangle as the global epicentre of tropical marine biodiversity in the Sahul Shelf, 4,110 Small Islands (coral and ornamental fish) – tourism object, religious tourism **(S)**

Threats

DD + Hydro-meteorological Disaster related to CC

Degradation & degradation rate of 3.46% per year (primary forest area will reach 6,226,200 ha in 2010 and will continue to be degraded to 5,758,700 ha in 2018). Raja Ampat, Kaimana, Fak-Fak, Maybrat and Tambrauw districts are categorized as **Medium Risk Class** and others in **High Risk** (Indonesia Disaster Risk Index, 2020) **(T)**



To develop NDC – LTS LCCR in West Papua through Multi Parties collaboration

Weaknesses

Acessbility, low data and low coordination

Outer small island, risk assessment (hazard, vulnerable, exposure and capacity building), National – Sub National – Small Islands

Opportunities

Preparing documents

LCDI – West Papua, Disaster Risk Management Plan & Strategic Environmental Studies + Coastal & Small Island Zone Plan

METHODOLOGY:

The method used in this research is system dynamics modelling

General variables for forest (mangrove; mineral & organic soils) management modelling

No	Variable name	Value & Parameter	Unit	Estimation Method
1	Availability of forest land	8.411.561 (2010)	ha	KLHK data (2011)
2	Non Forest	945.798 (2010)	ha	KLHK data (2011)
3	Forest Emission	1.018.005 (2010)	tCO_2e	Data Emisi x Faktor Emisi (IPCC, 2006)
4	Total GDP	41.361,7 (2010)	milyar	BPS Papua Barat (2011)
5	Forestry GDP	1.362,1	Milyar	BPS Papua Barat (2011)

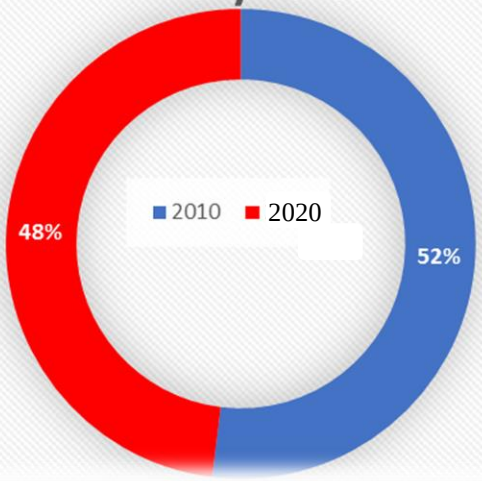
Validation

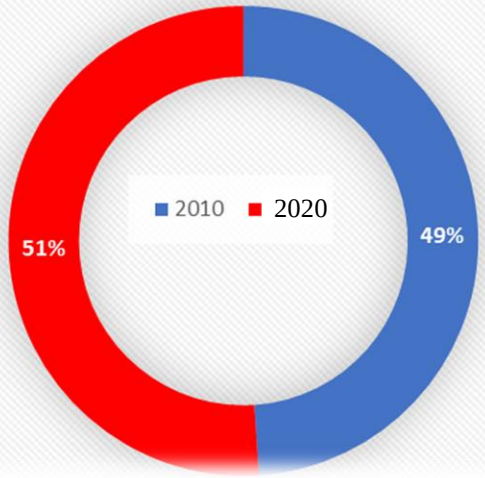
AME = (Si – Ai)/ Ai x 100%

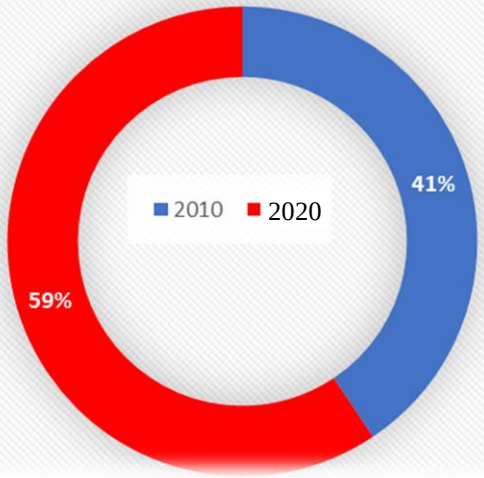
where AME is absolute mean error, A is actual value, and S is the value of simulation

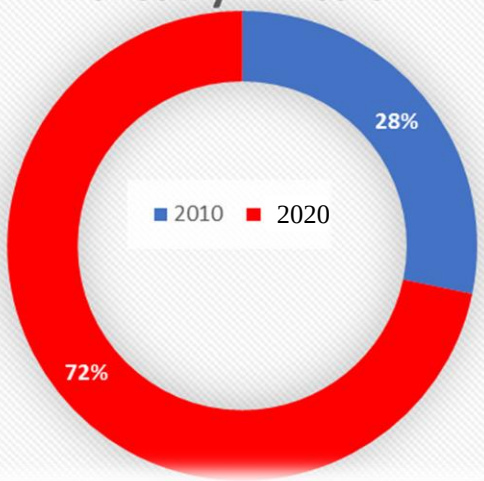
RESULT:

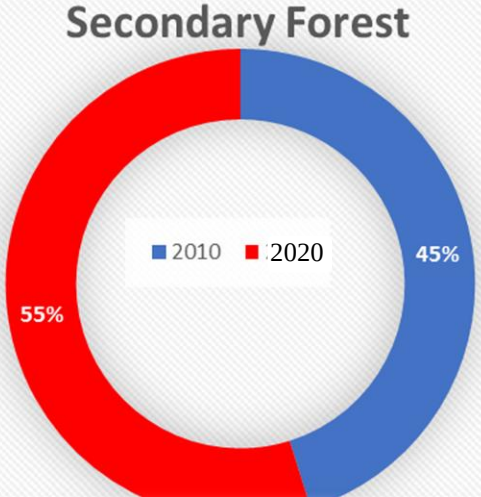
BAU Data (2010-2020)







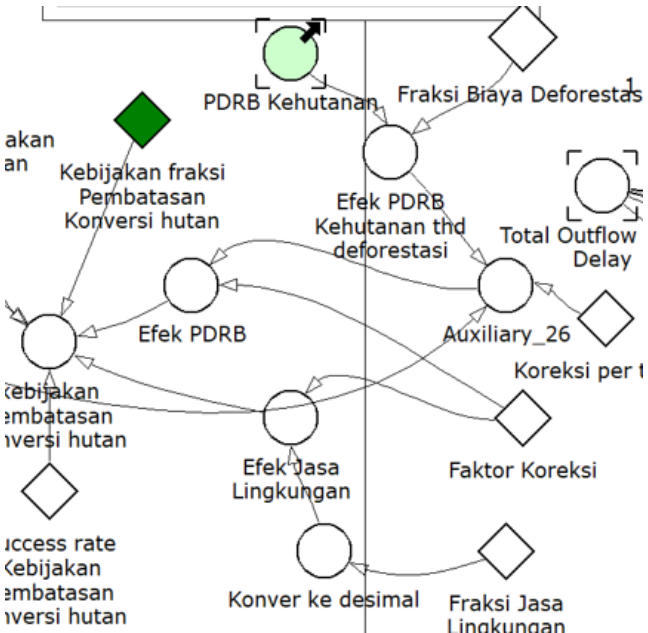


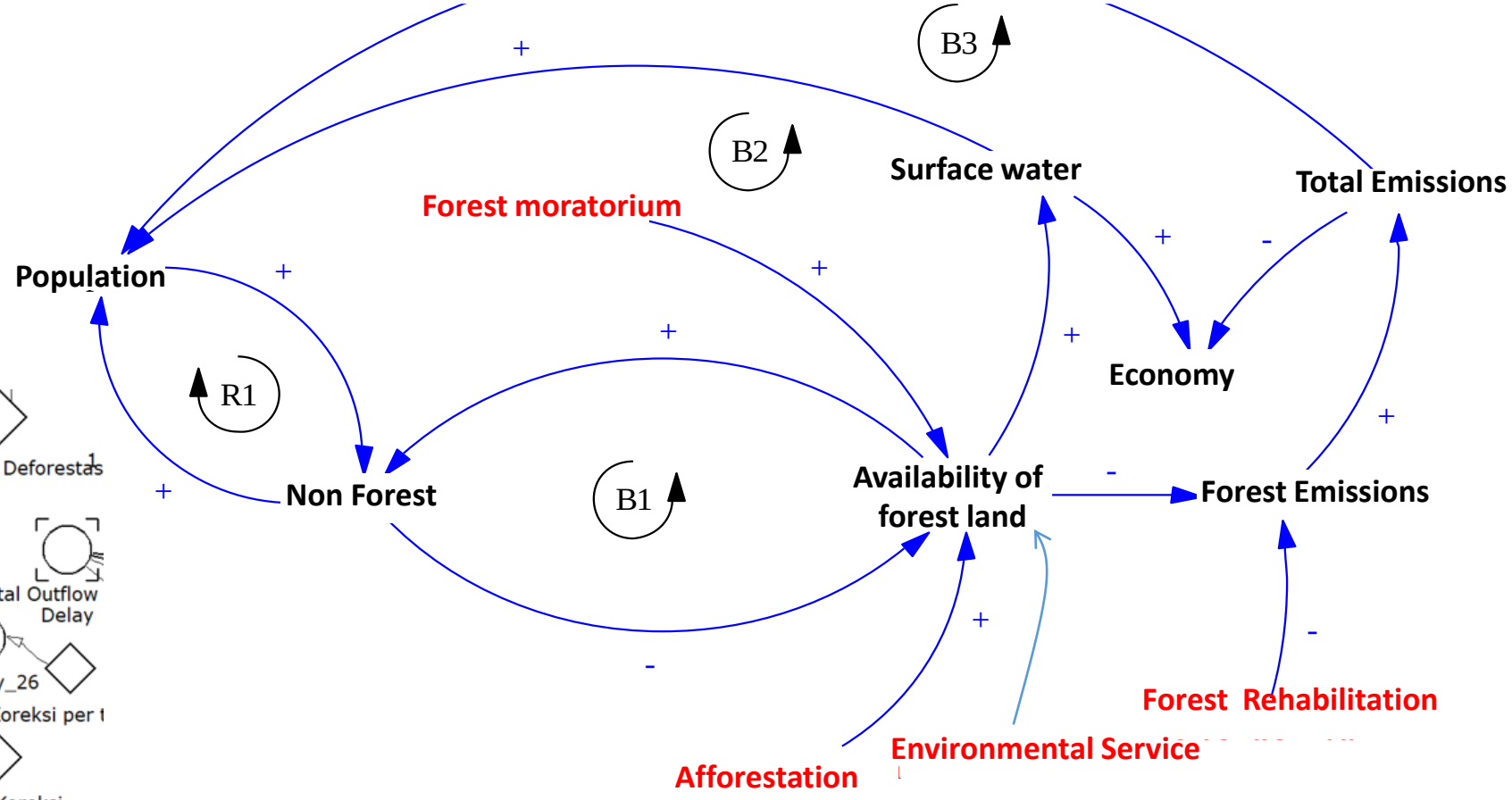


- Degradation rate, 1.05% per year (50.000 ha/year)
- Deforestation rate , 2.41% per year (4,000 ha/year)
- Secondary forest rate, 2.86% per year (60,000 ha/year)
- Total GRDP growth rate, 4.87% per year (2.000 billion IDR)
- Forestry emission rate, 12.40% per year (4,200,000 tCO2e), Gain-Loss method

RESULT:

CLD


PDRB Kehutanan
Fraksi Biaya Deforestas
Kebijakan fraksi Pembatasan Konversi hutan
Efek PDRB Kehutanan thd deforestasi
Total Outflow Delay
Efek PDRB
Auxiliary_26
Koreksi per t
Efek Jasa Lingkungan
Faktor Koreksi
Konver ke desimal
Fraksi Jasa Lingkungan


B3
B2
B1
R1
Surface water
Total Emissions
Forest moratorium
Population
Economy
Non Forest
Availability of forest land
Forest Emissions
Forest Rehabilitation
Environmental Service
Afforestation

RESULT:

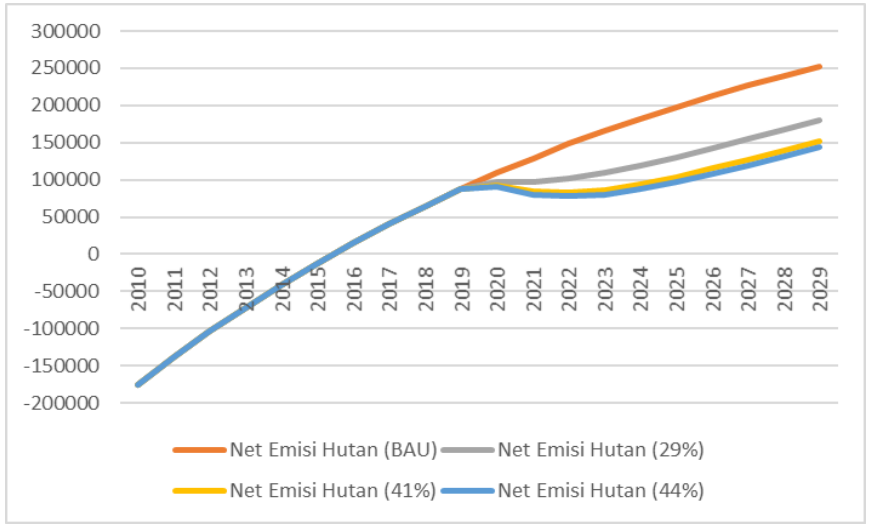
VALIDATION

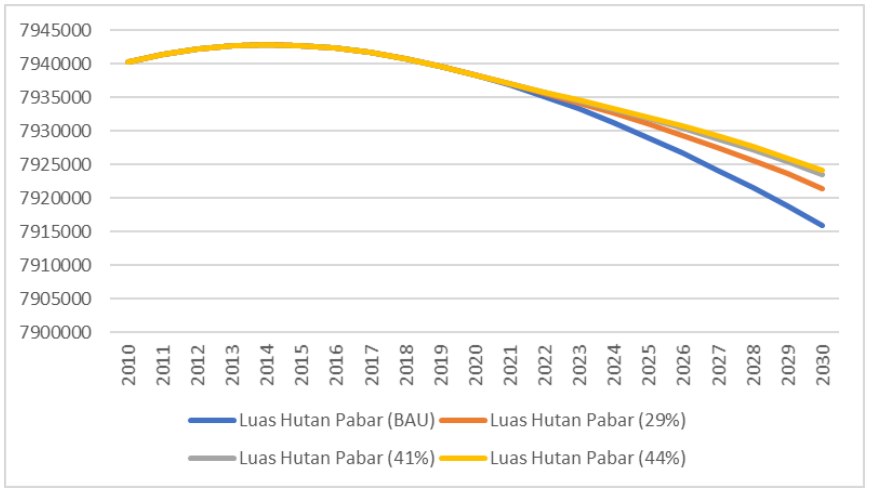
Years	Forest Area		Total GRDP		Forestry GRDP	
	Data	Simulation	Data	Simulation	Data	Simulation
2010	7,940,209	7,940,209	41,362	41,205	1,362	**1,120**
2011	7,930,991	7,938,359	42,867	43,467	1,424	1,242
2012	7,916,841	7,920,790	44,423	45,856	1,542	1,377
2013	7,911,383	7,910,516	47,694	48,380	1,420	1,527
2014	7,904,936	7,910,516	50,260	51,047	1,563	1,694
2015	7,918,980	7,896,762	52,346	53,866	1,663	**1,822**
2016	7,903,656	7,942,312	54,711	56,845	1,642	1,965
2017	7,907,778	7,857,996	56,907	59,995	1,701	2,109
2018	7,960,796	7,962,347	60,454	63,326	**1,859**	2,252
2019	7,958,522	7,957,189	**62,070**	**65,348**	**1,972**	2,395
2010	7,956,279	7,957,189	**61,592**	68,107	**1,954**	**2,538**
Average	7,928,216	7,926,744	52,244	54,313	1,646	1,822
	S	R	S	R	S	R
AME	**0.02**		**3.81**		**9.68**	

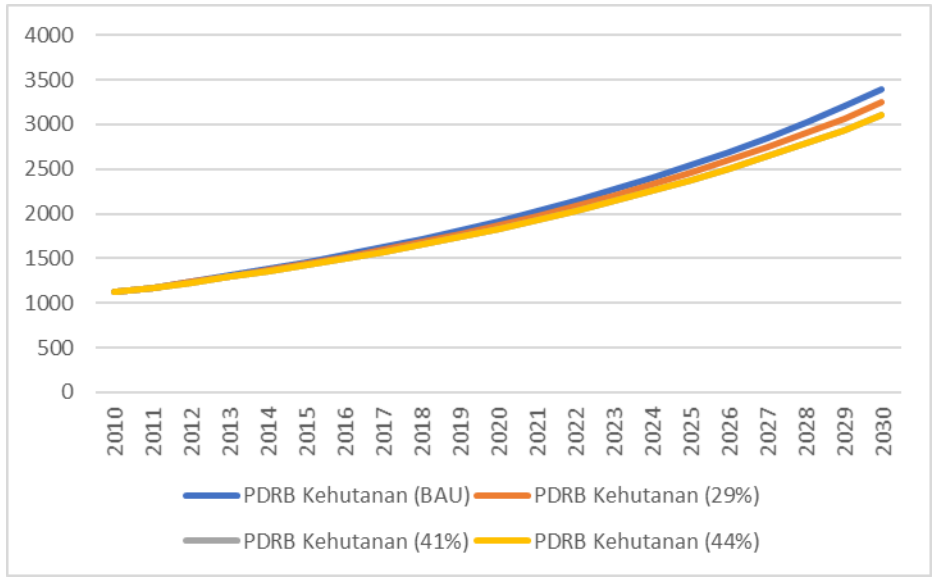
This value indicates that the AME value is <10%, which means that the model is valid

RESULT:

SIMULATION ANALYSIS



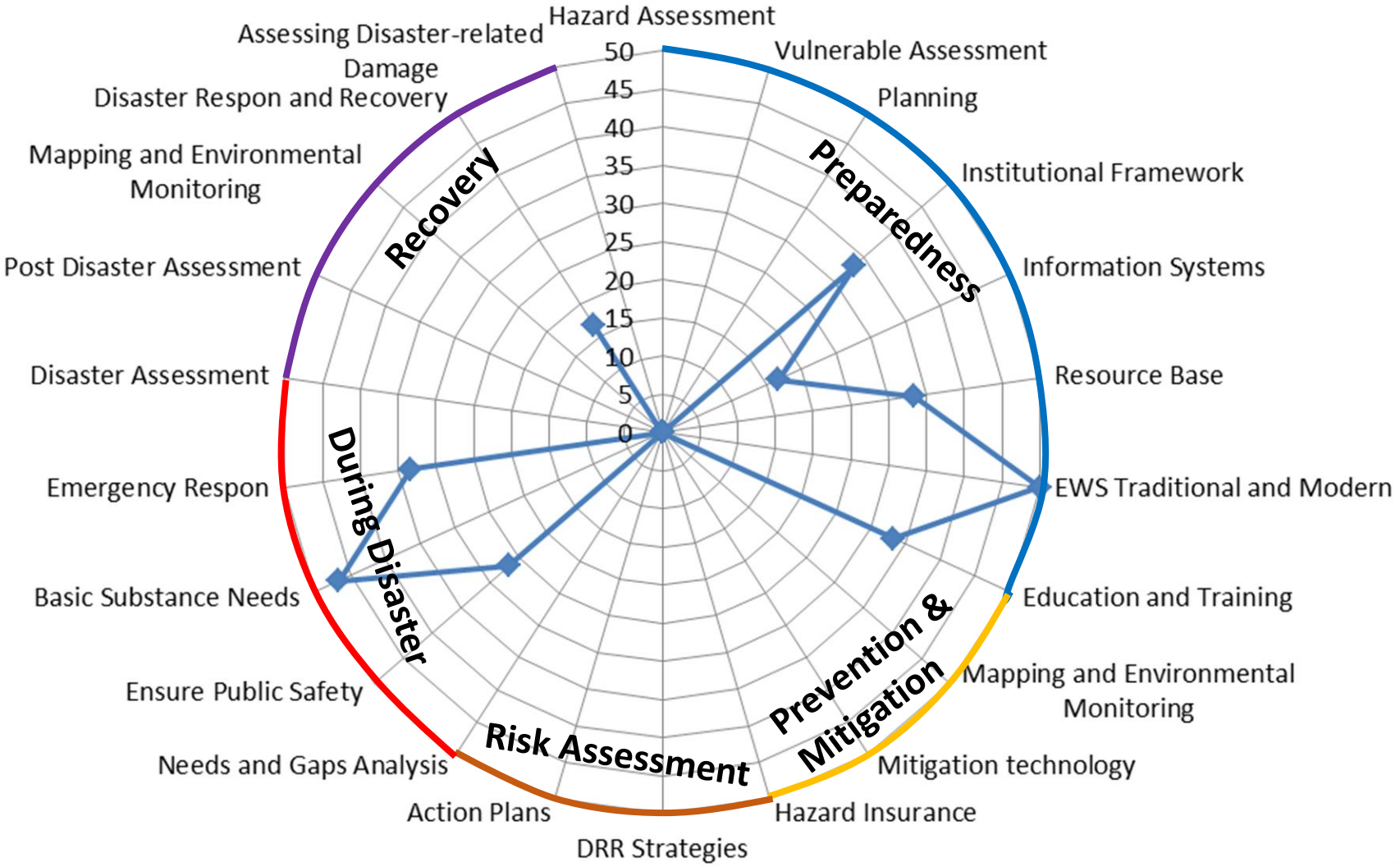




- **BAU scenario 2030 is still maintaining of 87% forest cover.**
- **CM1 scenario can save forest up to 2% until 2030 from BAU scenario or maintaining forest to 89%, decreased forestry GRDP up to 4.5% from BAU, and declined forestry emission of a 0.71 time (29%) of BAU.**
- **CM2 scenario can save forest up to 4% until 2030 from BAU scenario or maintaining forest to 91%, decreased forestry GRDP up to 8.8 % from BAU, and declined forestry emission of a 0.06 time (41%) of BAU**
- **CM3 scenario can save forest up to 5% until 2030 from BAU scenario or maintaining forest to 92%, decreased forestry GRDP up to 8.8 % from BAU, and declined forestry emission of a 0.06 time (44%) of BAU**

RESULT:

Capacity Building in Disaster Risk Management



CONCLUSION:

West Papua Sustainable Smart Develoment

Policy
- **Strengthening local institutional & policies for NDC, LCDI and DRR in small islands (LTS LCCR)**

Assessment
- **Mapping of existing CB for documentation, consolidation and information sharing – NDC, LCDI and DRR**

Sharing
- **Sharing technology from local university for mitigation and adaption, sharing information (news) from Media, sharing budget from private sector (Penta-helix)**

Economic
- **Developing the environmental services such as the clean water industry, natural tourism. and NTFP**

NEXT STEPS:

Tools

Integrated NDC, LCDI document with Risk Analysis especially in prone area of upstream, middle and downstream watershed areas.

Dev.

Intersection of achievements of NDC (Paris Agreement), LCDI, and Sendai Framework in West papua for LTS LCCR

WEST PAPUA SUSTAINABLE SMART DEVELOPMENT