PROCEEDINGS OF THE SIXTH MEETING OF NATIONAL REDD+ THEMATIC WORKING GROUPS
(September 19th, 2018)

Readiness Preparation Proposal-Readiness Fund of the FCPF
National REDD+ Office
Ministry of Climate Change
Government of Pakistan

Contents

LIST OF ABBREVIATIONS

AJK	Azad Jammu and Kashmir
CSO	Civil Society Organization
FP	Focal Point
FRELs	Forest Reference Emissions Levels
GHG-I	Greenhouse Gas Inventory
GIS	Geographical Information System
IGF	Inspector General of Forests
IGIS	Institute of Geographical Information System
KP	Khyber Pakhtunkhwa
PFI	Pakistan Forest Institute
PRMC	Provincial REDD+ Management Committee
Mt Co2 eq	Million Tonnes Carbondioxide Equivalent
NFMS	National Forest Monitoring System
NRC	National REDD+ Coordinator
NSC	National Steering Committee
REDD+	Reducing Emissions from Deforestation and Forest Degradation, Role of Conservation, Sustainable Management of Forests and enhancement of Forest carbon stocks
SIS	Safeguards Information System
SoP	Survey of Pakistan
SUPARCO	Pakistan Space and Upper Atmosphere Research Commission
WG	Working Group

INTRODUCTION & BACKGROUND

During the REDD+ Roadmap development process, four Working Groups (WGs) were constituted to provide a platform for stakeholder participation, technical and institutional support, advise National Steering Committee (NSC) and Provincial REDD+ Management Committees (PRMC) on related technical aspects of REDD+ (Reducing Emissions from Deforestation and Forest Degradation, Role of Conservation, Sustainable Management of Forests and enhancement of Forest carbon stocks). The WGs meet every six months for evaluating the progress of the REDD+ Readiness preparation activities in Pakistan. During previous meetings REDD+ WGs provided valuable contributions in consensus and endorsement of the National Standards for REDD+, Institutional Arrangements and a harmonized National Definition of forest land for Pakistan to meet international standards required for the implementation of REDD+. During the meetings the working Group also provide valuable recommendations and assist in the decision making process required at various levels.

A sixth meeting of the REDD+ WGs was held on 19th September 2018 at Islamabad. The main agenda was to examine the results of Field and Satellite based forest surveys conducted by the international consulting firm of Arbonaut Oy (Finland) in Joint Venture with WWF-Pakistan. The WG members also evaluated the mechanisms developed for the National Forest Monitoring System and Forest Reference Emission Levels[1] for Pakistan. Once finalized, the results of these surveys also contributes to the national Greenhouse Gas Inventory (GHG-I) from forestry sector in Pakistan.

OBJECTIVES

1. To present the results of study on developing National Forest Monitoring System (NFMS) and Forest Reference Emission Levels (FRELs) for Pakistan
2. Feedback on the Land use maps prepared for Pakistan for five periods from 1996-2016

PROCEEDINGS

The meeting started with recitation of verses from the Holy Quran followed by a formal round of introduction of the participants.

Syed Mahmood Nasir, National Project Director (REDD+) / Inspector General of Forests (IGF) formally welcome the participants from Provincial Forest Departments, Civil Society Organizations (CSOs), Survey of Pakistan (SoP), Punjab University, Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) and Pakistan Forest Institute (PFI). He also praised the participation of consultants from Arbonaut Oy (Finland) who travelled from Finland and Nepal. He rest assured to the consultants that the provinces will assist in the provision of data of land, as NFMS is a transparent system which is linked with the REDD+ Strategy and

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[1] Benchmarks to assess countries performance on reducing emissions from deforestation and forest degradation

Safeguards Information System (SIS) and it will be the backbone of transparent future hope for Pakistan.

Agenda of the meeting and list of participants are attached as **Annex I** and **Annex II.**

Session 1: Introduction

A brief overview on status of forest cover in Pakistan – A temporal analysis from 1996-2016:

Mr. Anish Joshi, Geographical Information System (GIS) Expert, Arbonaut gave an overview of findings on the status of forest cover in Pakistan from 1996-2016 at a periodic interval of four years. He briefed the participants on a comparison of methodologies of previous studies in Pakistan on National Forest Assessments. It was informed that the current study is the most comprehensive study at national level also covering time periods of previous studies. Furthermore, the study is based on agreed national standards consistent for all regions of Pakistan. Another merit of the study is use of Free and Open source tools and data as also promoted in the global level studies. It was informed that an overall accuracy of 82% could be achieved during the work at 95% confidence interval.

Mr. Anish informed the participants that total area of Pakistan has been considered as per the published data / maps of the Survey of Pakistan for reference. He further reported that the forest areas as per historical analysis using Landsat Imagery of 30 m resolution of Pakistan has been calculated as under:

Years	Forest Area (Ha)	% Area
1996	6,412,906.96	7.29
2000	5,344,899.16	6.08
2004	3,657,515.00	4.16
2008	6,761,291.04	7.69
2012	7,780,381.00	8.84
2016	5,029,005.89	5.72

The participants shown serious concerns on the statistics on the forest areas reported by the consultants. It was analyzed that the reported forest areas and mapping work (forest cover and land use) and the associated data need to be revisited by the consultants in terms of consistency and completeness based on ground realities. Mr. Anish Joshi also presented maps prepared for each Province and territory for the year of 2016. The participants pointed out various mistakes and statistics were also no accepted by the participants.

Mr. Anwar Ali, Forest Mensuration Officer from Khyber Pakhtunkhaw (KP) raised a question that forest cover increased from year 2004 to 2012 shows that that forest area has doubled which is not possible. He advised to look into the figures statistics and to identify the cause. Mr. Jarno explained that there was a major challenge during the initial stages of the project as very less

reference data was available for the period from 1996-2012 at national level thus the consultants could not compare their results for field verification.

Mr. Ismail, Provincial REDD+ Focal Point raised a question on the boundary data of Gilgit Baltistan. It was clarified by Mr. Afrasiyab, GIS Expert, National REDD+ Office that Survey of Pakistan has not yet published the official figure of areas statistics and boundary data of Gilgit Baltistan and Azad Jammu and Kashmir due to disputed status of the line of control.

Mr. Muhammad Iqbal, Deputy Team Leader-WWF asked if the extent of accuracy of the information i.e. 83% could be increased. Mr. Anish responded it depends upon the methodology and satellite data whereas sampling density, technical limitations also plays a role. If high resolution satellite is used that would give accuracy to 95% but methodology would be intensive, due to the non-availability of data mid-resolution satellite image is used keeping in view the standards of forest definition.

Syed Mehmood Nasir, IGF raised a question on what methodologies and resolution other countries have used whose NFMS is accepted. Mr. Anish responded to this question that in case of Nepal they used object based image classification with 5m resolution with accuracy attained upto 87%. In case of Brazil, the used manual vectorization system with the aid of Landsat and SERVIR. They have developed their own system by an organization INP.

Mr. Atif Shehzad, Manager SUPARCO raised a question about not using sentinel-10 m data which is also freely available. He further added that using sentinel an error estimation can be drawn for current scenario and that can be propagated for previous years. As sentinel is good for forest monitoring as it is comprised of several bands and gives more better visual interpretation and information. Mr. Anish Joshi replied that in back years 1996-2012 there was no availability of sentinel data as the satellite was launched in 2016. There is another limitation that currently Sentinel data is not available for entire Pakistan, however at regional levels use of sentinel data is recommended for future works.

Dr. Aurangzeb as a representative from Azad Jammu & Kashmir (AJK) Forest department said that the much variation in the forest cover is not easily acceptable by a common forester. The sudden increase and decrease in the trend has to be addressed.

Mr. Abdul Jabbar Qazi, Provincial Focal Point Sindh, expressed his concerns over variation in forest cover both at Provincial and National levels. Dr. Omer Raja, DIG-F / NRC (National REDD+ Coordinator) also expressed concern that a huge variation cannot takes place in the time series analysis as the same sample plot locations have been used for assessment. He advised the consultants to revisit the outliers and figure out the causes of inconsistency in the results.

Syed Mahmood Nasir, IGF showed serious concern on not reporting the linear plantations in Pakistan. He further concluded that the officers from provincial forest departments, based on their experience of the field, should identify the change in their respective forest area with the data of Arbonaut. He advised that the output of the study are the forest maps thus the field officers and provinces should compete the assessment in the group work and provide concrete recommendations.

Presentation on National Forest Reference Emission Levels (FRELs) for Pakistan

Mr. Jarno hamalainen, Team Leader, Arbonaut presented the finding on National Forest Reference Emission Levels for Pakistan. He informed that as per the study of consultants the

annual rate of deforestation is calculated to be 33736 ha from 1996-2016. On the other hand forests of Pakistan have been enhancing with a rate of 53464 ha per year as an average during the reported period.

Mr. Jarno informed the audience that only above ground and below ground pools have been considered as analyzed to be significant in contributing to the emissions from forestry sector. He presented in detail the carbon densities calculated for each climate zone and forest type. It was reported that average annual rate of carbon emissions calculated from forestry is 6.5 million tonnes CO_2 eq. He also presented a summary of the emissions measured from 1996-2016 as under:

Period	Total Emissions
1996 - 2000	3.34 Mt CO_2-eq
2004 – 2008	9.08 Mt CO_2-eq
2008 – 2012	2.25 Mt CO_2 - eq
2012-2016	8.37 Mt CO_2 - eq

During the plenary session Mr. Gohar Ali raised a question that sub-alpine is missing from the climate zone classification; Mr. Jarno responded that its data is available though not mentioned in presentation.

Mr. Afrasiyab questioned that why the net annual forest cover change is negative from 2000-2004 of alpine class, this was also seconded by Mr. Gohar Ali. Mr. Jarno responded that the results will be revisited after revision of the mapping work for accurate forest areas.

Mr. Niaz Kakar, Provincial REDD+ Focal Point Balochistan raised a question on authenticity of a map shown with layers of climate zones of Pakistan. Mr. Jarno informed that a reference map from T. J Robert has been used. Syed Mahmood Nasir identified that the reference map is incorrect as evident from the fact that Punjab cannot be included in the tropical zone. He further referred to a published research paper on holdridges life zone classification scheme for guidance. Mr. Afrasiyab further suggested to use the forest classification scheme already endorsed by the stakeholders during the fourth REDD+ Working Groups meeting instead of the mapped climate zones. He further added that the coding used for reporting carbon stock assessments for each forest class was confusing for the participants to understand and advised to prepare results based on forest classes and sub-classes for clarity and comparison.

Presentation on Development of National Forest Monitoring System for Pakistan

Dr. Ali Tahir, Associate Professor, Institute of Geographical Information System (IGIS) NUST presented the final design of the National Forest Monitoring System Web Portal for Pakistan. He informed that the portal is designed, however in order to launch a system setup and installation of a dedicated server is required at Global Change Impact studies center being the host institution as per the decision of the national steering committee. He also presented a standard operation

protocol proposed for the operationalization of the web portal. Mr. Gohar Ali enquired if the provinces have the ownership of their own data once it is fed into the system. Dr. Ali Tahir explained that there will be different level of access whereas the Provincial data will be accessible to the relevant province. The participants appreciated the work done by the consultants. On a question from Dr. Aurangzeb, Mr. Afrasiyab ensured that the system will be made compatible to the existing systems in Provinces in the additional funding activities during 2018-2020. He further brought to the notice of participants that the proposed NFMS has been developed for the first time in history of Pakistan where transparency and accessibility has also been focused upon.

Group Work

In the afternoon session the participants were divided in groups and started group work for evaluation of the maps of forest and other land uses.

Findings of the working groups on Forest / other Land use maps

1. WGs found certain errors especially in the misclassification of forest land and settlements. Some representative errors included missing juniper forests in Balochistan, whereas mango and other fruit orchards have been classified as forest land in Punjab and Sind.
2. The WG members altogether rejected the results of forest cover statistics having major reservations in the reported areas. The Forest Reference Emission Levels proposed were therefore also rejected.
3. The WG members observed that the maps and the associated data need to be revisited in terms of consistency and completeness based on the ground realities. The WG recommended these maps be reviewed thoroughly and validated at the district levels using reference maps and digital GIS data. To study the maps in detail, the WG members requested for the digital data and maps for thorough review by their respective GIS / Mapping teams and senior forest officers.
4. It was recommended to incorporate "linear plantations" in the study through mapping and estimating the carbon emissions based on necessary ground validation data.
5. WGs advised the consultants to improve coordination with Provinces. Focal Point from Balochistan advised the consultants to spare more time and visit the Provinces for better understanding and feedback for rectification of the maps

Closing Remarks:

The workshop ended with vote of thanks from Dr. Iqbal, Deputy Team Leader WWF-Pakistan with hope to gather again with improved and acceptable results.

Annex-I: Agenda of the meeting

Meeting of Sixth REDD+ Working Groups

Date: 19th September, 2018

Venue: Hillview Hotel, Islamabad

Session Plan		Facilitation
Session 1 : Introduction		
09 :00-09 :30	Registration	
09 :30-09 :35	Récitation	
09 :35-09 :45	Introduction of Participants	
09:45 – 10:00	Welcome remarks by the Advisor to Prime Minister on Climate Change	NRC / NPD
10:00-10:15	A brief overview on REDD+ Readiness progress in Pakistan	National REDD+ Office
10:15 – 10: 30	A brief overview on status of forest cover in Pakistan – A temporal analysis from 1996-2016	Arbonaut & WWF-Pakistan
10:30 – 11:00	Presentation on National Forest Reference Emission Levels (FRELs) for Pakistan	Arbonaut & WWF-Pakistan
11:00– 11:15	Tea Break	
Session 2 : Updates on the NFMS/FRELs for Pakistan		
11:15 – 11: 45	Presentation on National Forest Monitoring System (NFMS) for Pakistan	Arbonaut & WWF-Pakistan
11:45 – 12:00	Plenary session / Question & Answers	Arbonaut & WWF-Pakistan, NRO, WGs
Session 3: Evaluation of the LULUC Maps		
12:00 – 13:00	Formation of Groups & Group Work on evaluation of the Land use Maps prepared by WWF-Pakistan	Arbonaut & WWF-Pakistan, NRO
13:00 – 14:00	Lunch Break + Prayer	
14:00 - 15:45	Group Work on evaluation of the Land use Maps prepared by WWF-Pakistan	Arbonaut & WWF-Pakistan, NRO
15: 45-16:00	Tea Break	
16 :00 – 16 :30	Group presentations / recommendations / Endorsements	WGs
End of Day		

Annex-II: List of Participants

List of Participants

6ᵗʰ REDD+ Thematic Working Group Meeting on
Implementing REDD+ Readiness Proposal (R-PP) for Pakistan
September 19, 2018
Attendance Sheet

S.No	Name and Designation	Organization	Email & Contact No.	Postal Address	Signature
1	Aamir Shahid GIS Specialist	PFI	aamirgis@gmail.com	PFI, Peshawer	
2	Iftikhar-ul-hanan Farooqi	Punjab Forest Department	farooqi.f.u@gmail.com	Forest complex GT. Road Gwan Rawalpd	
3	M ARSALAN MUKHTAR	WWF -P	arsahlahn3@gmail.com	HOUSE #867 ST #32 PHASE 4A GHOURI TOWN, ISB	
4	Shaheen Arif	WWF -P	shaheen.igis.nust@gmail.com		
5	SHEHZAD SADIQ	SFD.	roxburgii@hotmail.com	Forest Campus Jinnah Avenue Model Colony Teh'	
6	Asya Ali	FATA Forest	alihayat76@yahoo.	DFO Bajour at Khar	
7	Syed Sharof-ud-Din	Forest Balochistan	ssa.bfwd@gmail.com	CCF (N) Quetta	
8	BILAL AHMED	AJK Forests	bilalahmed_1978@yahoo 03004241711	CCF Office MZd	

S.No	Name and Designation	Organization	Email & Contact No.	Postal Address	Signature
9	Dr. Zakir Hussain CF Baltistan	GB Forest & wildlife Deptt.	zakir.gau@gmail.com 0346-9559088	CF Office Satellite Town Skardu	
10	Muhammad Arif DFO	FPd M circle KP, Ford Deptt.	dfo.redd.kp@gmail.c pd.redd.kp@gmail.ca 030-05968732	FPd M circle Pdsi road Amandd Peshawr	
11	Dr Aurangzeb Khan	Pesh Forest Dep	aurangzeb_nrm@yahoo.c	Forest G. Block CCF. S. M	
12	Dr. Isma Younes	PU. Lahore	isma.geog@pu.edu.pk	Deptt. of Geography P.U. Lahore	
13	Niaz Mohammad	SAFI	m.niaz.safi@yahoo.ca	H.16 N-10 St. 8 Islamabad 0321	
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15	JARNO HAMALATO	ARBONAUT	JARNO.HAMALATO @ARBONAUT.com	Joensu FINLAND	
16	Ismail	GB Forest	dodishalla.gir	SCP	
17	Dr. Ali Tahir	NUST	ali.tahir@igis. nust.edu.pk	H-12, NUST	

6h REDD+ Thematic Working Group Meeting on
Implementing REDD+ Readiness Proposal (R-PP) for Pakistan
September 19, 2018
Attendance Sheet

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18	A. Jabbar Kazi	SFD.	ajkazi.65@gmail.com		
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20	A. Salam	ARID	0344-9495702		
21	Aasia Wahab	WWF	aasiafjwu@gmail.com		
22	Anwar Ali.	PFI	anwarforester@gmail.com 03335068176		
23	Atif Shahzad	SUPARCO	atif.sb@gmail.com 03232428828		
24	Sumayyah Aleem	REDD+ Office			
25	Farhat Jabeen	REDD+ Office			
26	Niaz Khan	REDD+ Balochistan	khamberjing@gmail.com	F. P. Office Quetta	
27	SHAHID IQBAL	BIRD WATCHER	03004699613	H-24 ST19 DHARAMPURA LHR	

6h REDD+ Thematic Working Group Meeting on
Implementing REDD+ Readiness Proposal (R-PP) for Pakistan
September 19, 2018
Attendance Sheet

S.No	Name and Designation	Organization	Email & Contact No.	Postal Address	Signature
28	S. M. Navi	IUI			
29	Dr. Raja Omar	DIGF, MoCC			
30	Muhammad Sohail	PO, UNDP	muhammad.sohail@undp.org		
31	Muhammad Umar	WWF	mumargis@gmail.com		
32	Kamran Ali	WWF	idkamran@gmail.com		
33	Anish Joshi	Arbonaut	anish.joshi@arbonaut.com		
34	Muhammed Afrasiyab	National Redd+ Office	mafrasiyab@redd-PK		
35					
36					

Attendance Sheet

S.No	Name and Designation	Organization	Email & Contact No.	Postal Address	Signature
37.	Muhammad Asim Waqar-ul-Hussnain Dy Director	Survey of Pakistan	waqar_ul07@gmail	H/No.52, ST#3 Sector E-7 Islamabad	
38	Sher Shah Hassan	GCISC	shershah538@gmail.com	GCISC, G8/1 Islamabad	
39	Misbeen Shafaat	GCISC	Smisbeeen@gmail.com	GCISC-G8/1 Islamabad	
40	M. Hamza Dar	GCISC	M.Hamzadar@gmail.com	GCISC-G8/1 Islamabad	
41	Ghulam Qadir Shah	SFD	gqshah.wwf@yahoo	0303-3335764	
42	Gohar Ali	KP Forest Deptt.	daudzai63@gmail.com	03339227849	

Annex-III: Photos of the Event

Welcome remarks by Syed Mehmood Nasir, Inspector General Forests/NPD

Mr. Anish updating audience on forest cover statistics (1996-2016) of Pakistan

Mr. Jarno briefing house on National FREL/FRLs

Dr. Ali Tahir presenting on NFMS Webportal

Planery Session

Group Work on evaluation of the Land use Maps prepared by WWF-Pakistan