

Appendix

Table A1. Different characteristics of MODIS and VIIRS sensors and active fire products

Characteristics		MODIS	VIIRS
	Satellite	Aqua and Terra	Suomi NPP and NOAA-20
	Orbit	705 km, sun-synchronous, near-polar	824 km, sun-synchronous, near- polar
	Scan Rate	20.3 revolutions per minute, cross-track	33.6 revolutions per minute, cross-track
	Swath	2330 km across track by 10	3000 km across track by 13 km
Sensor	Dimensions	km along track at nadir	along track at nadir
	Size	1.0 m x 1.6 m x 1.0 m	1.3 m x 1.4 m x 0.9 m
	Weight	250 kg	263 kg
	Power	225 Watts	154 Watts
	Data rate	11 Mbps (peak)	10.4 Mbps (peak)
	Quantization	12 bits	12 bits
	Design life	5 years	7 years
		Band	36
	Dual-gain band	0	8
Spectral	Coverage	0.4 μm to 14.5 μm	0.4 μm to 12.5 μm
	Auxiliary info	Fire Radiative Power, Geolocation, Geometry	Fire Radiative Power, Geolocation, Geometry
Spatial	Resolution	1 km at nadir	750 m at nadir
	Coverage	Global	Global
Temporal	Resolution	1-2 days	1 day
	Equator crossing time	1:30 a.m. and 1:30 p.m. local time	1:30 a.m. and 1:30 p.m. local time
	Product	MCD14DL	VNP14IMGTDL
Data	Format	Shapefile, text, Keyhole Markup Language, Web Map Service	Shapefile, text, Keyhole Markup Language, Web Map Service
	Projection	WGS 84	WGS 84

Source: Guenther et al. (2011); Li et al. (2018); NASA FIRMS (2020)

WGS 84: World Geodetic System 1984; Mbps: Megabytes per seconds; NOAA-20: United States National Oceanic and Atmospheric Administration - 20; NPP: National Polar-orbiting Partnership

Table A1 References

Guenther, B., Luccia, F. De, McCarthy, J., Moeller, C., Xiong, X., & Murphy, R. E. (2011). *Performance Continuity of the A-Train MODIS Observations: Welcome to the NPP VIIRS*. Retrieved from https://www.star.nesdis.noaa.gov/jpss/documents/meetings/2011/AMS_Seattle_2011/Poster/A-TRAIN_Perf_Cont_MODIS_Observa_-_Guenther_-_WPNB.pdf

Li, F., Zhang, X., Kondragunta, S., & Csiszar, I. (2018). Comparison of Fire Radiative Power Estimates From VIIRS and MODIS Observations. *Journal of Geophysical Research: Atmospheres*, 123(9), 4545–4563. doi: 10.1029/2017JD027823

NASA FIRMS. (2020). Active Fire Data. Retrieved August 18, 2020, from <https://earthdata.nasa.gov/earth-observation-data/near-real-time/firms/active-fire-data>

Table A2. Sampled household characteristics (N = 259)

Household attribute		FZ	PFZ	SZ	NRW	Chi-square test
Household	Proportion (%)	33.20	32.82	33.98	100	
	Duration of residence (year)	24.15	39.27	35.06	32.72	-
	Size (no.)	4.91	7.29	5.65	5.94	
Gender (%)	Female	8.14	31.76	14.77	18.15	$p < 0.001$
	Male	91.86	68.24	85.23	81.85	
Age (%)	18-30 years	12.79	0	16.09	9.77	$p < 0.001$
	30-60 years	77.91	75.9	62.07	71.88	
	60-90 years	9.3	24.1	21.84	18.36	
Original status (%)	Non-native	19.77	2.35	2.27	8.11	$p < 0.001$
	Native	72.09	96.47	97.73	88.8	
	Foreigner	8.14	1.18	0	3.09	
Marital status (%)	Single	11.63	2.35	19.32	11.2	$p < 0.001$
	Married	82.56	97.65	68.18	82.63	

	Divorced	4.65	0	3.41	2.7	
	Widowed	1.16	0	9.09	3.47	
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Education (%)	Illiterate	60	43.18	27.91	43.63	$p < 0.001$
	Primary school	25.88	42.05	38.37	35.52	
	Secondary school	14.12	13.64	29.07	18.92	
	University	0	1.14	4.65	1.93	
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Religion (%)	None	10.47	58.82	17.05	28.57	$p < 0.001$
	Animist	0	5.88	2.27	2.7	
	Christian	70.93	28.24	59.09	52.9	
	Muslim	10.47	3.53	20.45	11.58	
	Other	8.14	3.53	1.14	4.25	
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Source of income (%)	Farming	100	100	100	100	-
	Fishing	5.81	0	14.77	6.95	
	Trade	1.16	1.16	4.55	2.32	
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Farm (%)	Cocoa	38.37	87.06	0	41.31	-
	Cashew	0	36.47	100	45.95	
	Oil palm	23.26	10.59	0	11.2	
	Yam	37.21	95.29	77.27	69.88	
	Cassava	40.7	54.12	27.27	40.54	
	Banana	37.21	37.65	0	24.71	
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Farm size (ha)	Cocoa	2.12	3.85	0	3.32	-
	Cashew	0	2.19	4.83	4.14	
	Oil palm	1.73	2	0	1.81	
	Yam	0.52	1.33	1.04	1.08	
	Cassava	0.61	1.15	1.17	0.97	
	Banana	0.98	1.41	0	1.19	

FZ: Forest zone; PFZ: Preforest zone; SZ: Sudanian zone and NRW: N'Zi River Watershed

Table A3. Perceived months with the highest wildfire risk and occurrence

Months	Proportion (%)			
	FZ	PFZ	SZ	NRW
January	70.13	100	92.31	87.92
February	85.71	97.65	76.92	87.08
March	42.86	0	1.28	14.17
April	0	0	0	0
May	0	0	0	0
June	0	0	0	0
July	0	0	0	0
August	1.3	0	0	0.42
September	3.9	0	0	1.25
October	1.3	0	0	0.42
November	7.79	1.18	5.13	4.58
December	35.06	36.47	53.85	41.67

FZ: Forest zone; PFZ: Preforest zone; SZ: Sudanian zone and NRW: N'Zi River Watershed

Table A4. Indicators of high wildfire risk in the landscape

Indicators	Proportion (%)			
	FZ	PFZ	SZ	NRW
Trees shed / lose their leaves	96.1	2.35	3.85	32.92
Experience of Harmattan winds	35.06	97.65	89.74	75
Browning of grasses and bushes	40.26	35.29	47.44	40.83
Extended dry season	92.21	43.53	19.23	51.25
High sun intensity period	72.73	88.24	33.33	65.42
Migration of certain birds	1.3	0	0	0.42

FZ: Forest zone; PFZ: Preforest zone; SZ: Sudanian zone and NRW: N'Zi River Watershed

Table A5. Destroyed crops in the landscape and their mean area

Crops	FZ		PFZ		SZ		NRW	
	%	Mean area (ha)	%	Mean area (ha)	%	Mean area (ha)	%	Mean area (ha)
Cashew	0	-	38.71	1.37	100	3.08	45.81	2.51
Cocoa	45.65	1.64	62.9	1.26	0	-	38.71	1.39
Coffee	4.35	2.5	19.35	1.17	0	-	9.03	1.36
Rubber	13.04	6.17	3.23	1	0	-	5.16	4.87
Oil palm	13.04	2.12	3.23	1	0	-	5.16	1.84
Teak	4.35	1	4.84	1	0	-	3.23	1
Cassava	15.22	1.19	6.45	1	0	-	7.1	1.31
Banana	13.04	1.19	1.61	1	0	-	4.52	1.22
Yam	6.52	2.17	3.23	1.5	0	-	3.23	1.9
Maize	4.35	1	0	-	0	-	1.29	1
Mango	0	-	0	-	2.13	1	0.65	1
Other	6.52	1	0	-	0	-	1.94	1

FZ: Forest zone; PFZ: Preforest zone; SZ: Sudanian zone and NRW: N'Zi River Watershed

Table A6. Effective and preferred means of receiving information on wildfires education

Means of awareness	FZ		PFZ		SZ		NRW	
	Eff.	Pref.	Eff.	Pref.	Eff.	Pref.	Eff.	Pref.
Meeting with rural authorities or communities	11.54	81.4	4.17	98.82	10	69.32	9.38	83.01
Radio program	53.85	38.37	87.5	7.06	70	15.91	65.62	20.46
Workshop	0	0	0	1.18	0	0	0	0.39
Video	0	1.16	0	0	0	0	0	0.39
Television program	94.23	43.02	62.5	7.06	60	17.05	79.17	22.39
Program at church or mosque	1.92	31.4	0	0	0	0	1.04	10.42
Education campaign with fire volunteers	0	0	0	1.18	0	1.14	0	0.77
Education campaign with forestry services	0	44.19	4.17	98.82	0	89.77	1.04	77.61
Posters	0	0	0	0	0	0	0	0
Newspapers	11.54	2.33	0	0	0	0	6.25	0.77
School education program	0	1.16	0	0	0	0	0	0.39
Other	7.69	17.44	0	0	5	14.77	5.21	10.81

FZ: Forest zone; PFZ: Preforest zone; SZ: Sudanian zone and NRW: N’Zi River Watershed; Eff.: effective; Pref.: preferred