

## FACT SHEET FOREST WATCH INDONESIA



### **Function Loss of Protected Areas in Puncak, Bogor**

Puncak area in Bogor Regency holds vital role for its surrounding areas with lower altitudes. The whole area is the upstream region of main watersheds: Ciliwung, Cisadane, Kali Bekasi, and Citarum rivers. More specifically, Puncak protected forest area is the main water provider for 3 watersheds: Ciliwung, Kali Bekasi, and Citarum, which irrigate main agricultural lands in West Java; Jonggol and Kelapa Nunggal in Bogor Regency and mainly rice fields in Pantura area (Bekasi and Karawang regencies).

Law No. 26/ 2008 about National Spatial Plan mentioned that Jakarta, Bogor, Depok, Tangerang, Bekasi, Puncak and Cianjur (Jabodetabekpunjur) region was appointed as National Strategic Area (*Kawasan Strategis Nasional, KSN*). Furthermore, as mentioned in article 75e, this KSN appointment was based on the region's environmental function and carrying capacity which was explained more specifically in article 80; "*... to provide protection of water use balance which (without it), may cause national loss annually*".

Moreover, Presidential Decree No. 54/2008 about Regional Spatial Planning for Jabodetabekpunjur, article 2, paragraph 1b stated that one of the main purposes of this region spatial planning is to manifest sustainable environmental carrying capacity in area management to ensure surface water and soil conservation and overcome flood. Regional development must guarantee the aspects mentioned above by considering sustainable environmental carrying capacity in area management (article 8b).

Technically the main embodiment of Presidential Decree No. 54/2008, which was derived from Law No. 26/2008, can be achieved if protected, protected forest, and water infiltration areas (Chapter I, article 1, and paragraph 6, 7, and 8) have specified scope in regulations derived from it.

Water use balance protection from both mentioned regulations cannot be separated from the existence of forest in the region in question which functions as water infiltration area. Law No. 41/1999 on Forestry, in Article 3, 6, and 18, stated that the existence of optimal forest region

should cover sufficient area with proportional distribution, at least 30% of watershed or island area. Article 17 of Law No.26/2007 about Spatial Planning further emphasized that forest area in a certain region must be at least 30% of the watershed area.

West Java Provincial Regulation No. 22/2010 on Provincial Spatial Planning (PSP) stipulated that 45% of the region to be protected area in 2018 (article 26) and no less than 30% for each watershed.

## Spatial Planning and Watershed Conditions

Bogor Regency has come under spotlight due to their proposition to revise 2005-2025 spatial planning. Protected Forest Area was proposed to be reappointed as Production Forest Area and other uses, referring to West Java PSP.

Table 1. Conditions of Protected Forest Area in Puncak, Bogor Regency

Forest Conditions 2000-2009	KSA/PA (ha)	HP (ha)	other use (ha)	Sum (ha)
Forest loss	0,05	2.346,71	2.411,27	4.758,03
Remain as non-forest area	0,00	115,64	114,53	230,17
Remain as forest area	0,02	1.451,17	2.125,01	3.576,20
<b>Total</b>	<b>0,08</b>	<b>3.913,51</b>	<b>4.650,82</b>	<b>8.564,41</b>

Sources:

- Supplement II Bogor Regency Regulation No. 19/2008. Bogor Regency Government, 2008.
- Designation Map of Forest Area and Waters in West Java Province. Ministry of Forestry, 2009.
- Depiction of Indonesian Forest Condition 2000-2009 Period. Forest Watch Indonesia, 2011.

Regardless of current region status, in ecological function perspective, reduction in forest cover (deforestation) in West Java between 2000 to 2009 period has reached 16.2% (599,142 ha) with the remaining forest cover of 9,7% or 358.304 ha to support the whole West Java area of 3.7 millions ha. On lower administration level in the same period, Bogor Regency has lost 73,591 ha forest cover (24.6% of total regency area), leaving the regency with the remaining forest of 40,991 ha (13.7% of total area). In both cases, for provincial and one of the its regency area, forest cover loss exceeded the remaining forest area.

Table 2. Distribution of Forest Cover in Bogor Regency and Surrounding Regencies/Cities.

Regencies/Cities	Forest loss area (ha)	Remain as non-forest area (ha)	Remain as forest area (ha)	Total region area (ha)	% Forest cover	% Forest loss
DEPOK CITY		19,789.12		19,789.12	0.0%	0.0%
BOGOR	73,591.46	184,577.52	40,991.06	299,160.04	13.7%	24.6%
BOGOR CITY		11,249.08		11,249.08	0.0%	0.0%
BEKASI	90.18	131,512.67		131,602.85	0.0%	0.1%
KARAWANG	18,066.47	169,078.59	4,261.74	191,406.80	2.2%	9.4%
CIANJUR	64,112.27	250,500.23	44,386.59	358,999.10	12.4%	17.9%
PURWAKARTA	40,068.88	44,339.75	7,553.21	91,961.84	8.2%	43.6%
SUKABUMI	56,006.78	325,725.47	34,086.89	415,819.13	8.2%	13.5%
SUKABUMI CITY	0,53	4,868.60		4,869.13	0.0%	0.0%

Sources:

- Designation Map of Forest Area and Waters in West Java Province. Ministry of Forestry, 2009.
- Depiction of Indonesian Forest Condition 2000-2009 Period. Forest Watch Indonesia, 2011.

Another challenge for West Java Province, particularly Bogor Regency is the adjacent Special Capital Region (*Daerah Khusus Ibukota, DKI*) Jakarta, as the face of Indonesia. Jakarta, a metropolitan city with massive infrastructure development, is located in the north coast of Java and, hence ecologically vulnerable. If forest cover in upstream region is not maintained, accumulation of surface water would be high and quick. Furthermore, low level of groundwater will increase the risk of sea water intrusion which may cause land subsidence.

Out of six watersheds in Bogor Regency which downstream regions are in DKI Jakarta, only Ciliwung watershed has forest cover. The area only covers 3.565 ha (12,22%). In total, forest area for those six watersheds only covers 4.30% of the total area which is insufficient and critical to support Jakarta.

Table 3. Watersheds in Bogor Regency which downstream regions are in DKI Jakarta

Watershed	2009: Forest cover (ha)	2009: non-forest (ha)	Watershed area in Bogor Regency (ha)	% Forest CO
CILIWUNG	3,565.61	25,620.93	29,186.54	12.22%
K. ANGKE PESANGGRAHAN		35,526.08	35,526.08	
K. BUARAN		1,544.53	1,544.53	
K. CAKUNG		7,379.33	7,379.33	
K. KRUKUT		5,048.21	5,048.21	
K. SUNTER		4,227.56	4,227.56	
Grand Total	3,565.61	79,346.64	82,912.25	4.30%

Source:

- Depiction of Indonesian Forest Condition 2000-2009 Period. Forest Watch Indonesia, 2011.
- Watershed. BPDAS-PS. Ministry of Forestry, 2011.

## Ciliwung Watershed: Jakarta's Last Fortress

Watershed and forest cover are inseparable. Water retention area that are covered by forest, particularly in higher altitude, act as the main support in water system. Naturally, groundwater and surface water form interconnecting ecosystems which sustain all kinds of life forms. More importantly, groundwater in a coastal region like Jakarta, is essential to prevent sea water intrusion.

Ciliwung watershed has an area of almost 39,000 ha, and 29,000 ha of it is located in Bogor Regency. All that was left of forest cover as an overlay now has only an area of 9.2%, which is in Puncak region. It is remarkably insufficient and still shrinking. In 2000-2009, the forest loss in Ciliwung watershed had reached almost 5,000 ha. An area that is only slightly bigger than Sukabumi City.

Protected Forest Area of Bogor Regency, which is mostly located in Megamendung and Cisarua districts, has only 2,500 ha of forest cover. It is safe to say that Ciliwung is the only watershed that is able to support Jakarta's water system best.

Table 4. Kondisi Hutan berdasarkan Wilayah Kecamatan di dalam Kawasan Hutan Lindung dan DAS Ciliwung-Kabupaten Bogor.

District	Forest Loss (ha)	Remain as non- forest area (ha)	Remain as forest area (ha)	Area of district (ha)
CISARUA	1,188.78	88.03	1,257.97	2,534.78
MEGAMENDUNG	1,116.85	4.29	1,228.55	2,349.69
BABAKANMADANG	11.26		17.41	28.67
SUKARAJA	15.09	1.54		16.63
SUKAMAKMUR			8.41	8.41
<b>Total</b>	<b>2,331.98</b>	<b>93.87</b>	<b>2,512.33</b>	<b>4,938.17</b>

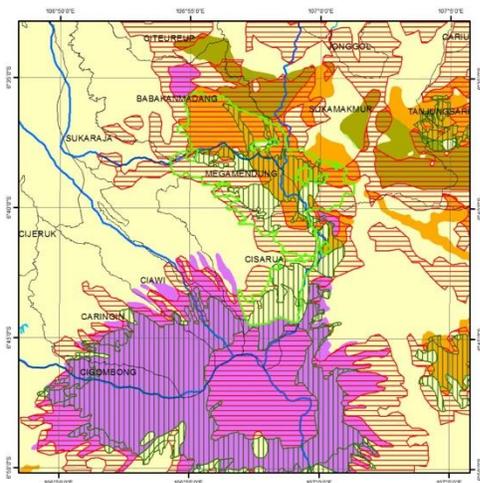


Figure 1. Map of Ciliwung Watershed Status in Puncak

## Land Use in Puncak Protected Area

The land in Puncak Protected Forest Area has been managed not only by Perhutani which handles production forest in Java, but also by private owners which number were estimated to exceed those of local people. Newly opened land underlined the disregarded land status as protected forest area.

Road network in this region also depicted how vast the land in protected forest area has been converted. In Megamendung district, road network has penetrated 2 km into protected forest area from the boundary, even into areas with relatively steep contour. Another notable problem is, even though located in protected area, the road constructions was actually facilitated by government.

Although patches of 'forest' still exist, not all types of forest have the same capacity in water-related functions, particularly in terms of water retention capacity, *e.g.* retaining groundwater after the rain. Conifer forests (*e.g.* pine trees) incline to have a relatively high rate of evapotranspiration due to their extensive foliage. Currently, pine stands can be found in patches in both nature and residential (vacation complexes) area.

Developing tourist spots in Curug Cisuren was one of efforts by Perhutani to amplify benefit from forests. Based on information from local people, this tourist spot was not as popular as Curug Cilember. Curug Cisuren is located in an area that was supposed to provide sustainable water flow/stream, as it is pretty far from residential area. Its location which was surrounded by pine forests and far from tea plantation area was thought to hinder water flow to this area.

Table 5. Field Exploration: Land Use in Puncak Protected Forest Area

No	X	Y	ALT	FINDING
WP006	712468	9265316	761	Villa gate: bukit angin
WP007	713223	9265458	905	Villa complex gate: megaindah
				Complex gater: pusdik reskrim polri and Ministry of Foreign Affairs guesthouse
WP008	713183	9265499	915	Private lands, hills were land-cleared
WP009	712911	9265011	806	Gardens
				Coffee plantations between resin-producing trees and pines
WP010	713015	9265006	802	Cirangrang ii Bridge, apbd kab. Bogor 2008 facilities
				Landslide-prone signs
WP011	712956	9264888	816	Perhutani signboard, kth megamendung lestari
				megamolek villa signboard, across perhutani signboard
				perhutani plantations, pine
WP014	713930	9264720	911	private land security post
				land clearing

WP015	713993	9264772	912	local people residence between (non-local) private lands
				Open field for rent
WP016	714215	9264890	936	freshwater direct use through pipes

## RECOMMENDATIONS

In order to protect Puncak's, particularly Ciliwung watershed, remaining capacity to maintain hydrologic cycle, we strongly suggest the government to:

1. Do spatial revision of West Java Province according to Presidential Ordinance No. 54/2008.
2. Enforce regulations to protect Puncak region by:
  - no longer issuing building permit and land certificates.
  - assertively condemning unauthorized and illegal land use (*e.g.* arable fields and residential area) in protected area.
3. Immediately rehabilitating open fields in Puncak region with forest tree species which support water system (*e.g.* trees that promote soil water retention, etc)

## References

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