



UNOSAT

Tropical Cyclone Talas-17.

Population exposure and precipitation analysis in Vietnam and LAO PDR

17 July 2017

Population Exposure Analysis

17 July 2017

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Overview

Talas-17 is a category 1 tropical cyclone that affected the north-central coast of Vietnam and Lao PDR. This cyclone originated on 14 July 2017 in the South China Sea (northwest Pacific) at a speed of about 37 km/h. On 16 June 2017, tropical cyclone Talas-17 made landfall on the Hà Tĩnh Province, Vietnam and moved a few hours later towards the Bolikhamxai Province, Lao PDR with a maximum sustainable wind speed of 93 km/h. The tropical cyclone is soon expected to dissipate on land, however heavy rains are forecasted over the next few days, which may outcome flash floods and landslides.

Based on data of the observed and predicted tropical cyclone path, wind speeds from JRC (Warning 6 issued on 16 July 2017 at 21:00 UTC), and population data from WorldPop, UNITAR-UNOSAT conducted a population exposure analysis for Vietnam and Lao PDR:

- 3, 294, 890 people are living within 90km/h wind zones, from which 3, 283, 205 are in Vietnam
- 7, 641, 353 people are living within 60km/h wind zones from which 4, 783, 863 are in Vietnam and 2, 857, 489 in Lao PDR

Also included is an estimation of the precipitation accumulation in Vietnam (GMP) from the 14 to the 16 of July 2017. In this sense, the country's average was 240 mm of precipitation in three days with some areas reaching 300 mm.

Population exposure estimates are based on cyclone track (JRC) and WorldPop data

Population Exposure in Vietnam



92, 701, 100

Total population of Vietnam

3, 283, 205

Total population living in **90 km/h** wind speed zones

4, 783, 864


Total population living in **60 km/h** wind speed zones

Province / District	Wind Speed Zone		Total
	90km/h	60km/h	
Nghệ An	1,950,396	1,138,196	3,088,592
Vinh	332,479		332,479
Diễn Châu	249,031	4,377	253,408
Thanh Chương	241,638	5,457	247,095
Yên Thành	239,590	3,064	242,655
Nghi Lộc	230,809		230,809
Đô Lương	180,216	3,118	183,334
Nam Đàn	158,884		158,884
Quỳnh Lưu	144,224	180,063	324,287
Hưng Nguyên	133,701		133,701
Cửa Lò	23,489		23,489
Anh Sơn	16,292	106,155	122,447
Tân Kỳ	44	153,109	153,153
Tương Dương		88,173	88,173
Thái Hòa		42,128	42,128
Quỳ Hợp		118,087	118,087
Quỳ Châu		58,462	58,462
Quế Phong		67,974	67,974
Nghĩa Đàn		157,257	157,257
Kỳ Sơn		57,642	57,642
Con Cuông		93,129	93,129
Hà Tĩnh	1,286,956	76	1,287,032
Kỳ Anh	209,609	76	209,686
Thạch Hà	159,033		159,033
Cẩm Xuyên	155,225		155,225

Can Lộc	154,285		154,285
Hương Khê	130,904		130,904
Hương Sơn	129,994		129,994
Đức Thọ	96,417		96,417
Nghi Xuân	89,966		89,966
Hà Tĩnh	75,311		75,311
Vũ Quang	48,371		48,371
Hồng Lĩnh	37,840		37,840
Quảng Bình	45,853	837,375	883,228
Tuyen Hoa	33,779	48,246	82,025
Minh Hóa	9,436	43,525	52,961
Quảng Trạch	2,637	176,756	179,393
Bố Trạch		196,344	196,344
Lệ Thủy		162,451	162,451
Đồng Hới		122,615	122,615
Quảng Ninh		87,438	87,438
Thanh Hóa		2,568,729	2,568,729
Thanh Hóa City		258,647	258,647
Quảng Xương		255,721	255,721
Tĩnh Gia		251,556	251,556
Hoằng Hóa		241,403	241,403
Nông Cống		218,489	218,489
Thọ Xuân		215,519	215,519
Triệu Sơn		187,606	187,606
Thiệu Hóa		162,305	162,305
Hậu Lộc		146,394	146,394
Đông Sơn		127,177	127,177
Như Thanh		99,662	99,662
Thường Xuân		91,677	91,677
Yên Định		86,224	86,224
Như Xuân		66,704	66,704
Hà Trung		53,759	53,759
Nga Sơn		36,822	36,822
Ngọc Lạc		30,897	30,897
Sầm Sơn		29,427	29,427
Vĩnh Lộc		8,612	8,612
Lang Chánh		128	128
Quảng Trị		207,275	207,275
Vĩnh Linh		115,022	115,022
Gio Linh		57,679	57,679
Triệu Phong		24,779	24,779
Hải Lăng		9,795	9,795
Cồn Cỏ		-	-
Ninh Bình		18,269	18,269
Kim Sơn		18,269	18,269
Nam Định		13,673	13,673

Nghĩa Hưng		13,657	13,657
Hải Hậu		16	16
Thừa Thiên - Huế		272	272
Phong Điền		272	272
Total	3,283,205	4,783,864	8,067,069

Population Exposure in Lao PDR



6, 758, 353
Total population of Lao PDR

11, 685
Total population living in 90 km/h wind speed zones

2, 857, 489
Total population living in 60 km/h wind speed zones

Province / District	Wind Speed Zone		Total
	90km/h	60km/h	
Khammouan	5,876	328,818	334,694
Nakai	5,876	27,083	32,960
Hinboon		91,324	91,324
Thakhek		77,152	77,152
Mahaxay		37,163	37,163
Bualapha		34,766	34,766
Nhommalath		34,518	34,518
Xebangfay		14,680	14,680
Xaybuathong		10,791	10,791
Nongbok		1,339	1,339
Bolikhamsai	5,809	266,733	272,542
Khamkheuth	5,809	49,304	55,113
Paksane		66,029	66,029
Pakkading		57,721	57,721
Thaphabath		43,052	43,052
Bolikhanh		26,697	26,697
Vienthong		23,931	23,931
Vientiane		618,316	618,316
Vangvieng		138,162	138,162
Thoulakhom		86,311	86,311
Phonhong		73,500	73,500
Kasy		70,409	70,409
Hinhurp		51,422	51,422
Feuang		47,050	47,050
Keo Oudom		37,999	37,999

Mad		37,994	37,994
Xanakharm		30,291	30,291
Viengkham		45,179	45,179
Vientiane [prefecture]		445,947	445,947
Chanthabuly		113,537	113,537
Xaythany		76,166	76,166
Naxaithong		54,677	54,677
Sisattanak		49,973	49,973
Sikhottabong		47,698	47,698
Mayparkngum		42,648	42,648
Xaysetha		29,249	29,249
Hadxaifong		16,694	16,694
Sangthong		15,305	15,305
Louangphrabang		295,838	295,838
Louangphrabang		82,195	82,195
Chomphet		46,601	46,601
Phonxay		45,621	45,621
Xieng Ngeun		42,863	42,863
Nan		30,767	30,767
Phoukhoun		24,599	24,599
Park Ou		13,502	13,502
Pak Xeng		8,906	8,906
Viengkham		785	785
Xiangkhoang		280,353	280,353
Pek		86,961	86,961
Phookood		63,905	63,905
Kham		40,689	40,689
Nonghed		32,508	32,508
Khoun		28,454	28,454
Morkmay		14,134	14,134
Phaxay		13,702	13,702
Xaignabouri		214,440	214,440
Xayabury		65,264	65,264
Phiang		42,009	42,009
Hongsa		35,099	35,099
Xienghone		23,433	23,433
Ngeun		21,056	21,056
Khop		16,730	16,730
Parklai		10,045	10,045
Thongmyxay		803	803
Bokeo		140,631	140,631
Houixai		54,180	54,180
Nam You		33,336	33,336
Pha Oudom		29,990	29,990
Paktha		20,112	20,112
Tonpheung		3,012	3,012

Oudômxai		134,590	134,590
Hoon		65,516	65,516
Pakbeng		33,165	33,165
Nga		29,591	29,591
Beng		6,319	6,319
Houaphan		69,943	69,943
Xamtay		38,492	38,492
Huameuang		17,377	17,377
Viangthong		14,075	14,075
Xaisômboun		50,285	50,285
Xaysomboun		16,310	16,310
Phun		11,058	11,058
Hom		7,835	7,835
Thathom		7,693	7,693
Longsane		7,389	7,389
Savannakhét		10,225	10,225
Vilabuly		6,778	6,778
Atsaphone		3,300	3,300
Xaybuly		83	83
Sepone		64	64
Louang Namtha		1,370	1,370
Nalae		972	972
Viangphoukha		397	397
Total	11,685	2,857,489	2,869,174

Sources:

Cyclone Track: Joint Research Center-GDACs

Administrative Levels: GADM

Spatial Demographic Data: WorldPop (2015)

Analysis: UNITAR-UNOSAT (17/07/2017)

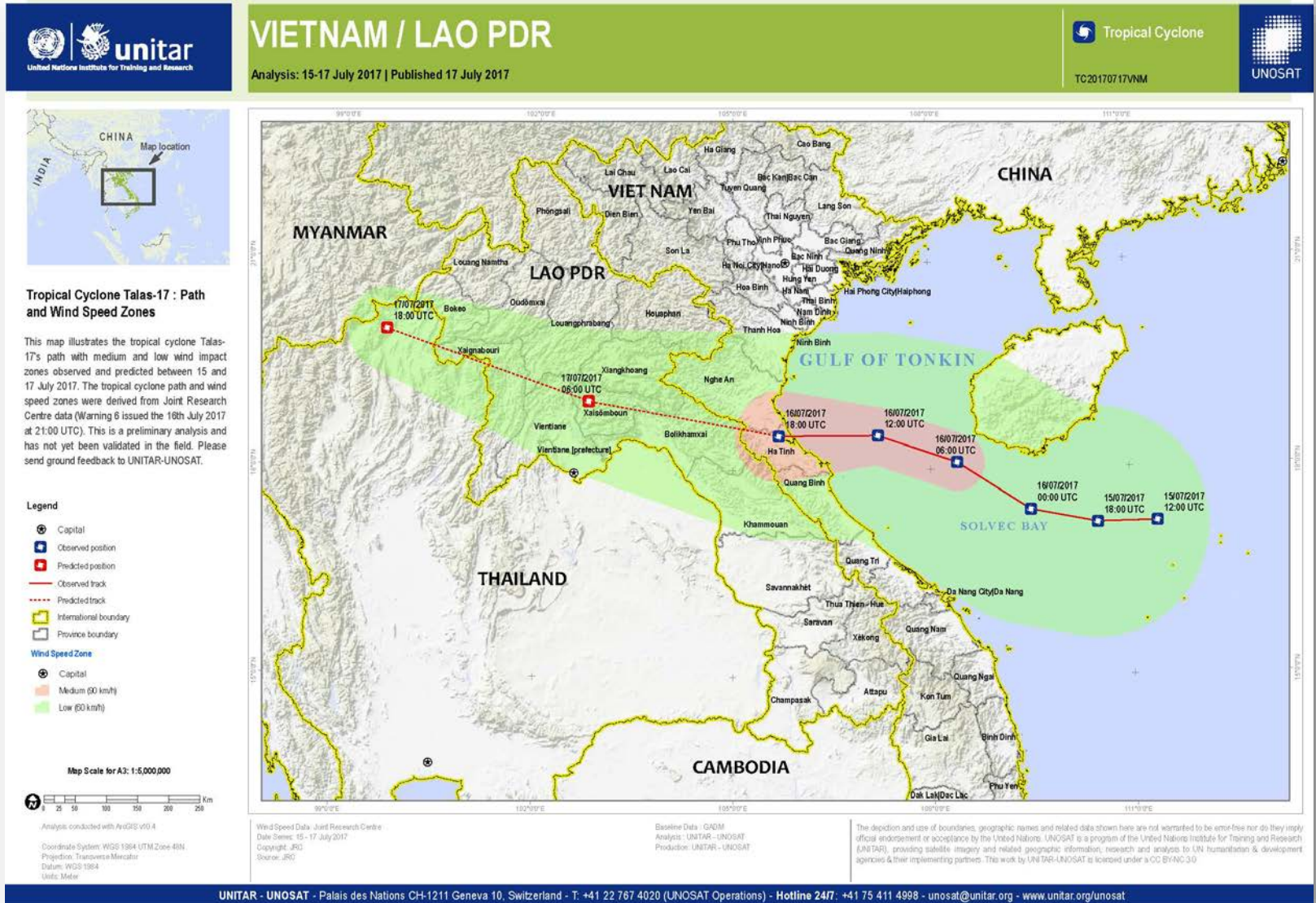
The population exposure has been calculated using a 100 m resolution WorldPop dataset. This is a preliminary analysis & has not yet been validated in the field.

Download complete excel tables from [here](#)

The map below, illustrates the exposed population to the cyclone's related wind speed zones at municipality level in Ninh Binh, Nghe An, Ha Tinh, Quang Binh and Quang Tri provinces.

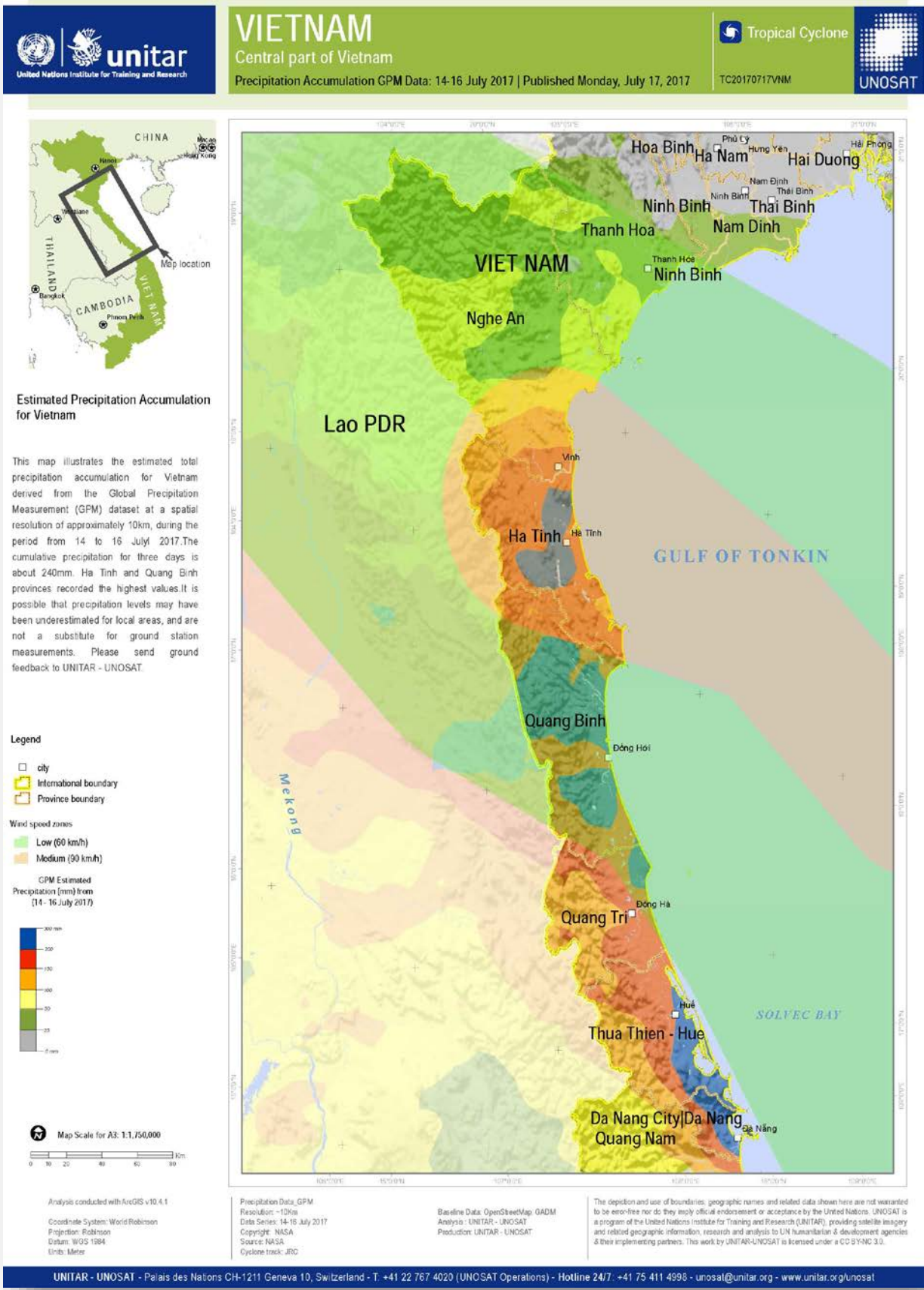


Map1: Population exposure at province/municipality levels



Map2: Talas 17 Cyclone path with medium and low wind impact zones.

Download pdf map from [here](#)



Map3: Precipitation accumulation map 14-16 July 2017

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