

# Earthquake Risk Transfer for Taiwan

## Overview

Taiwan has resulted from an on-going collision between the Luzon volcanic arc, the continental margin of South China. We attempt at providing new insights about the earthquake behavior by continuously monitoring ground shaking patterns in North, South, East, and West of Taiwan. Since July 2018 Earling network has been able to analyze millions of records of ground shaking each month to generate local models that cause an earthquake in the region utilizing artificial intelligence algorithms. Now, as a result, we are able to issue preparedness alert from hours to days before an earthquake happens to people and authorities. About 3 weeks after the latest light intensity earthquake, which rock one of the most populated regions of Taiwan, a preparedness alert issued by Earling for the region, 4 days before an M4.2 earthquake, shake the center of Taiwan.

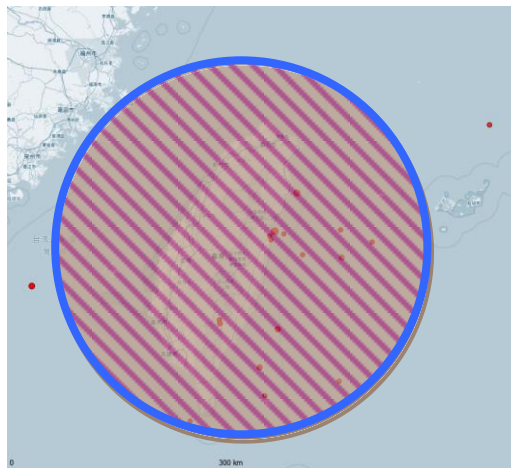


Figure 88. Taiwan is covered by Earling to issue accurate EPAs, which can be followed by a significant earthquake.

EPA Effect on Probable Maximum Loss

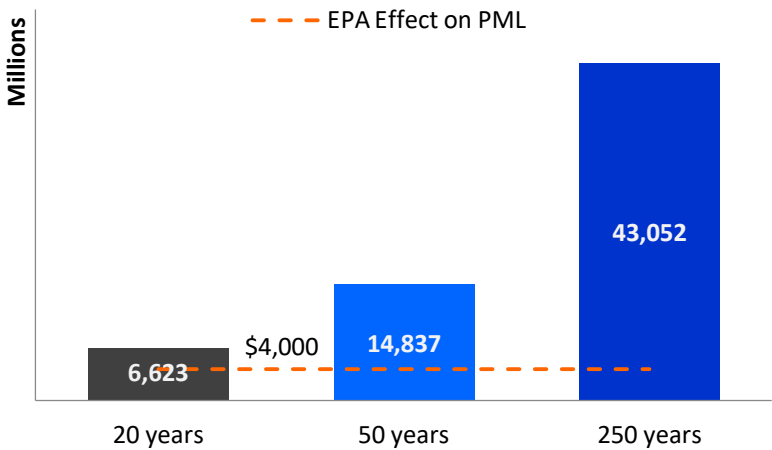


Figure 89. Probable Maximum Loss - Mean return period in Taiwan (Taiwan (China) Disaster & Risk Profile, 2014). Taiwan earthquake Average Annual Loss is \$2,702.02 million.

Taiwan Documented EPAs

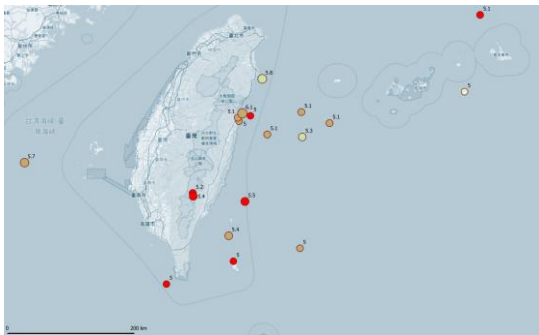


Figure 90. Taiwan experienced 12 shallow earthquakes > M5.0 in 2019. Some of the EPAs issued that are documented represent that Earling algorithms can issue alerts precisely for the region which can decrease pains and costs of earthquakes for Taiwan.

Average Annual Loss				
EPA Issued Date	Earthquake	Mag	Status	AAL (Million)
02:54 Jan 22, 2019 <sup>36</sup>	03:19 Jan 22, 2019 <sup>37</sup>	5.1	Hit	\$2,702
Nov 15, 2019 <sup>38</sup>	Nov 25, 2019 <sup>39</sup>	5.0	Late Hit	
12:56 Oct 1, 2019 <sup>40</sup>	02:17 Oct 1, 2019 <sup>41</sup>	4.4	Hit	
12:56 Oct 1, 2019	17:12 Oct 1, 2019 <sup>42</sup>	4.4	Hit	
July 21, 2019 <sup>43</sup>	July 26, 2019 <sup>44</sup>	5.3	Hit	
July 21, 2019	July 26, 2019 <sup>45</sup>	5.6	Hit	
June 8, 2019	Canceled	-	-	
02:54 Jan 22, 2019 <sup>46</sup>	03:19 Jan 22, 2019 <sup>47</sup>	5.1	Hit	
Jan 17, 2019	Jan 29, 2019 <sup>48</sup>	5.1	Late Hit	
Jan 17, 2019	Jan 29, 2019 <sup>49</sup>	5.1	Late Hit	

<sup>36</sup> <https://www.instagram.com/p/Bs68BF8ADME/>

<sup>37</sup> <https://earthquakes.ga.gov.au/event/ga2019bmutda>

<sup>38</sup> <https://twitter.com/FarzadAzima/status/1195320522847993857>

<sup>39</sup> <https://earthquakes.ga.gov.au/event/ga2018umtdog>

<sup>40</sup> <https://twitter.com/FarzadAzima/status/1178836331776167941>

<sup>41</sup> <https://www.emsc-csem.org/Earthquake/earthquake.php?id=796154>

<sup>42</sup> <https://www.emsc-csem.org/Earthquake/earthquake.php?id=796154>

<sup>43</sup> <https://twitter.com/FarzadAzima/status/1152868601348665345>

<sup>44</sup> <http://geofon.gfz-potsdam.de/eqinfo/event.php?from=rss&id=gfz2019onxu>

<sup>45</sup> <http://geofon.gfz-potsdam.de/eqinfo/event.php?from=rss&id=gfz2019ooek>

<sup>46</sup> <https://www.instagram.com/p/Bs68BF8ADME/>

<sup>47</sup> <https://earthquakes.ga.gov.au/event/ga2019bmutda>

<sup>48</sup> <https://inatews.bmkg.go.id/light/?act=realtimeev>

<sup>49</sup> <http://geofon.gfz-potsdam.de/eqinfo/event.php?from=rss&id=gfz2019mqoc>



Table 11. EPAs that issued for Taiwan in 2019.

