EXAMPLES OF REPARCELLATION

EXCERPT FROM "Remaking the urban mosaic. Participatory and inclusive land readjustment" UN-Habitat, 2016

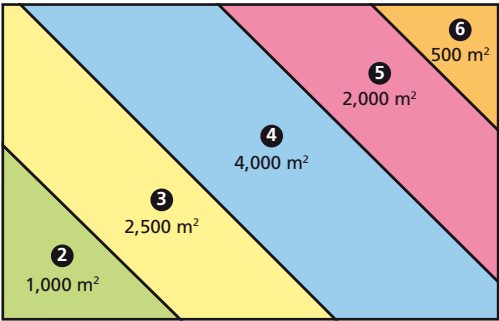## EXAMPLES OF REPARCELLATION

Before land readjustment

❷ - ❻ private landowners

Figure 13 Original ownership of area to be readjusted

AREA-BASED, NO MUNICIPAL RESERVE

This is the simplest scenario. The site is held by five landholders. It is on the edge of the city, and is currently unoccupied. A uniform price per square metre is assumed; all the landholders are involved, and all agree to the reparcellation plan. No residents have to be relocated. The municipality requires 30% of the total area for a road and a park, but does not need any land reserved for its own use.

Figure 13 shows the original layout; Figure 14 shows the final layout; Table 8 shows the calculations. All the landholders give up 30% of their area. In return, they get a smaller plot with road frontage and services, and permission to build on it.

After land readjustment
Land contribution ratio: 30%

❶ municipality   ❷ - ❻ private landowners

Figure 14 Land readjustment plan based on land area, with no municipal reserve

- **Landholder 3**, for example, starts off with 2,500 m². He ends up with two plots totalling 1,750 m².

TABLE 8   LAND AREAS BEFORE AND AFTER READJUSTMENT – NO RESERVE

Land contribution = 30% for all landholders

Landholder	Before Area m²	Land contribution Area m²	After Area m²
1 Municipality public space	0	0	3,000
2	1,000	300	700
3	2,500	750	1,750
4	4,000	1,200	2,800
5	2,000	600	1,400
6	500	150	350
Total	**10,000**	**3,000**	**10,000**

AREA-BASED, WITH MUNICIPAL RESERVE

Here, the municipality needs to reserve another 10% of the land (1,000 m²) for a building plot that it can develop and sell to cover the costs of putting in the road and infrastructure.

Figure 15 shows the original and final layouts; Table 9 shows how the areas are calculated. All the landholders give up 40% of their area.

Landholder 3, who started out with 2,500 m² ends up with a 1,500 m² plot.

After land readjustment
Land contribution ratio: 40%

❶ municipality   ❷ - ❻ private landowners

Figure 15   Land readjustment plan based on land area, with municipal reserve

TABLE 9   LAND AREAS BEFORE AND AFTER READJUSTMENT – WITH RESERVE

Land contribution = 40% for all landholders
Reserved land = 10%

Landholder	Before Area m²	Land contribution Area m²	After Area m²
1 Municipality public space	0	0	3,000
1 Municipality reserved	0		1,000
2	1,000	400	600
3	2,500	1,000	1,500
4	4,000	1,600	2,400
5	2,000	800	1,200
6	500	200	300
Total	**10,000**	**4,000**	**10,000**

❚❚ The key factor, remember, is that land value is determined socially. Land values increase or decrease based on what is happening in the broader community. ❞

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Photo: Rainer Müller-Jökel

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CALCULATING COMPENSATION

Here the readjusted plots are standard sizes; each landholder gets one or more plots depending on their original landholding (Figure 16, Table 10). If someone gets less land back than the entitlement, that landholder gets a cash payout from the municipality. If the landholder gets more land back than the claim, he or she has to pay the municipality.

- **Landholder 3** gets only 1,400 m² after the readjustment: 350 m² less than he is entitled to (see the "Entitlement" column in Table 10). So the municipality must pay him compensation of $35,000.

- **Landholder 2** gets 100 m² more than he is entitled to, so must pay the municipality $10,000.

- **Landholder 5** gets exactly the right area of land back, so pays nothing.

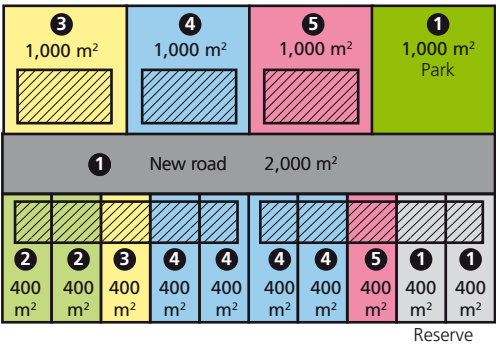- **Landholder 6** started off with the smallest plot. She was entitled to 350 m² of

After land readjustment
Land contribution ratio: 40%
with building plots allocated

❶ municipality   ❷ - ❻ private landowners

Figure 16   Readjustment based on area with compensation for excess or shortfall

readjusted land, but after negotiations, decided instead to take cash compensation instead. She gets $35,000.

- **The municipality** reserves an extra 800 m² of land to sell to raise the $80,000 needed to cover the compensation costs.

TABLE 10   LAND AREAS BEFORE AND AFTER READJUSTMENT – WITH COMPENSATION FOR SHORTFALL OR EXCESS AREAS

Land contribution = 30% for all landholders
Reserved land = 8%, used to pay for compensation; compensation rate = $100/m²

Landholder	Before Area m²	Contri- bution required Area m²	Entitle- ment Area m²	Land actually assigned Area m²	Differ- ence* Area m²	Compen- sation* $
1 Municip. pub. space	0			3,000		
1 Municip. reserved	0		0	**800**	800	80,000
2	1,000	300	700	**800**	100	10,000
3	2,500	750	1,750	**1,400**	−350	−35,000
4	4,000	1,200	2,800	**2,600**	−200	−20,000
5	2,000	600	1,400	**1,400**	0	0
6	500	150	350	**0**	−350	−35,000
Total	10,000	3,000	7,000	10,000	0	0

* A **positive** number means the landholder has received more than his or her entitlement, so must pay for it.
A **negative** number means the opposite: he or she gets less than the entitlement, so gets compensation.

CONTRIBUTIONS BASED ON LAND VALUE

All the examples above use the land area as the basis for calculating the areas each landholder is apportioned. They also assume that no tenants need to be included as beneficiaries. But some of the original plots may be currently more valuable for some reason: they already have road frontage or services; they are close to a park or shopping centre; they already have buildings on them. The holders of these plots will want this value taken into account in the land readjustment process – otherwise they may refuse to take part.

Basing the readjustment on the initial value is more complicated than using the land area alone. The idea is to find out how much each plot is currently worth, and work out what proportion that is of the total value of the whole project area. It is then possible to convert these proportions into land entitlements. People with more valuable plots at the start end up with larger plots at the end.

In the example in Table 11, the land values vary from plot to plot. Plots 2 and 3 are more valuable because they are next to a road; they are valued at $60 per square metre. Plots 5 and 6 lack road access; they are worth only $40 per square metre.

The entitlement area depends not on the area of each plot but on its value. It is calculated like this:

Entitlement =

(Value of plot) / (Total value of project land)

× Total project area

× (1 – Contribution ratio)

TABLE 11   LAND AREAS BEFORE AND AFTER READJUSTMENT, BASED ON LAND VALUE

Land contribution = 30% for all landholders

Reserved land = 8%, used to pay for compensation; compensation rate = $100/m²

Landholder	Before	Value		Entitle-ment	Land actually assigned	Differ-ence*	Compen-sation*
	Area m²	$ per m²	$	Area m²	Area m²	Area m²	$
1 Municip. pub. space	0				3,000		
1 Municip. reserved	0				800	800	80,000
2	1,000	60	60,000	824	800	-24	-2,400
3	2,500	60	150,000	2,059	1,400	-659	-65,900
4	4,000	50	200,000	2,745	2,600	-145	-14,500
5	2,000	40	80,000	1,098	1,400	302	30,200
6	500	40	20,000	275	0	-275	-27,500
Total	10,000		510,000	7,000	10,000	0	-100

* A **positive** number means the landholder has received more than the area to which he or she is entitled, and must pay for it.

A **negative** number means the opposite: the landholder receives less than the entitlement, and will be compensated for the shortfall.

For **Landholder 3**, this works out as:

Entitlement =

$150,000 / $510,000

$\times 10,000 \ m^2 \times (100\% - 30\%)$

= 2,059 m²

The actual land allocations can be approximated to the entitlements, or the differences can be made up by compensating the landholders in cash.

- **Landholders 2, 3 and 4** get compensation in addition to their new plots.

- **Landholder 5** gets a bigger plot than she is entitled to, so has to pay the municipality the difference.

- **Landholder 6** was entitled to a plot measuring 275 m², but she decided to take cash instead.

- **The municipality** sets up a fund to pay the compensation amounts. It sells the 800 m² of land it has reserved for this purpose. After paying off all the claimants (and receiving the payment from Landholder 5), it earns a small profit of $100.

Note that the compensation amounts are different from the previous example, where land area, not value, was used as the basis. Landholders 2 and 3 are better off as they had more valuable plots. But Landholders 5 and 6 are worse off than in the previous example because their plots were worth relatively little.

The municipality could earn more by setting the contribution ratio higher. That would give it a larger amount of reserved land. But it might run into opposition from the landholders, who will want to capture as much of the value of their land as possible.

SLIDING SCALE

Table 12 shows an example of using a sliding scale of contribution ratios to calculate the plot entitlements. The stakeholders

❝The land readjustment in Bhuj was extremely pro-poor. For the landowners who had very small parcels, very minimal or zero contributions were taken. For public land and larger land parcels, higher contributions were taken.❞

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Photo: Rainer Müller-Jökel

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TABLE 12   LAND AREAS BEFORE AND AFTER READJUSTMENT, SLIDING SCALE OF CONTRIBUTIONS

Land contribution = variable according to land size. Overall = 30%

Landholder	Before		Land contribution	After
	Area m²	%	Area m²	Area m²
1 Municipality public space	0			3,000
2	1,000	15%	150	850
3	2,500	30%	750	1,750
4	4,000	40%	1,600	2,400
5	2,000	25%	500	1,500
6	500	0	0	500
Total	10,000		3,000	10,000

agree that the smaller landholders need to contribute a smaller proportion of their land than larger landholders. The holders of the smallest plots do not have to contribute any land at all.

The scale is set so landholders with over 3,000 m² contribute 40% of their area, and those with smaller plots contribute progressively smaller proportions. Those with 500 m² or less contribute nothing. Over the whole project area, the landholders contribute 30% of the land for public use.

STAKEHOLDER ENGAGEMENT

All the stakeholders have different interests. The success of a PILaR project depends on gaining their support and finding a solution that is acceptable to all (or to as many people as possible). It is important to engage the stakeholders to win this support and to ensure that the readjustment reflects their needs and wishes. See Chapter 7 for ideas on how to do this.

PILaR aims to ensure that all the stakeholders are better off as a result of the readjustment process. That includes informal residents and other people with informal rights. As a guide:

• No-one (or as few people as possible) should be forcibly evicted.

• Everyone with a recognized formal or informal claim to the land is compensated either by an equivalent plot or in cash.

• Everyone who resides on the land has the right to continue residing there after the reapportionment, in housing of an equal or higher quality, and at the same rent.