



FIFA Women's World Ranking

Background

Ten years after the launch of the FIFA/Coca-Cola World Ranking for men's national teams, women's football will also have an objective yardstick for measuring the sporting performance of a steadily expanding number of national teams. By launching the FIFA Women's World Ranking, FIFA is hoping to give the popularity of women's football a well deserved extra boost. According to the Big Count survey published by FIFA two years ago, some 22 million women play football regularly in over 130 countries. Almost one hundred teams – substantially more than at previous competitions – contested the preliminary competition of the fourth FIFA Women's World Cup. Some 3000 games form the basis of the FIFA Women's World Ranking (WWR).

FIFA Women's World Ranking – Why?

- Promotion of the Women's Game
- Realistic Assessment: Putting Everyone in their Place
- Statistical Analysis of the state of the Women's Game
- Equal Importance of Women's and Men's Football
- Solid foundation: some 3000 games since 1971
Europe ~58%, Intercontinental, ~21%, Asia ~10%,
Concacaf ~5%, Africa ~3%, Oceania ~2%, South America ~2%

In launching this Ranking, FIFA aims to further arouse (and contribute substantially to) global interest in the women's game and stimulate discussion among those interested, as well as provoking widespread comment among the media. At the same time, this new service will provide football fans (and national players) with a realistic assessment of their team's comparative worth. On a more technical note, it will enable FIFA and others to better assess the development of specific teams and of the game in general.

FIFA Women's World Ranking – Key Criteria

- Result of the Match
- Home v. away, or neutral ground
- Importance of the match
- Difference in WWR between the teams

General Considerations

In the FIFA Women's World Ranking (WWR) teams are ranked according to a value that is a measure of their actual strength. One of the benefits of this is that a considerable amount can be learned about the ranking value (or rating points) of a team. For example it tells us that if a team has 72 rating points more than their opponents, who they meet in a knock out match on neutral ground, then their chance of going through to the next round is 60%.

Although a certain amount of mathematics is inevitable, the system used is still easily understandable and enables all interested parties to understand the teams' movements, or even to calculate the Ranking themselves. Since the first match dates back to a little over 30 years ago (the first FIFA-recognised women's international was held on 17 April 1971 when France faced the Netherlands), it has been possible to comprehensively catalogue the data about international women's football. When contemplating the Ranking system used, it is important to take this factor into account, as well as to consider that the intrinsic value of continental championship games and regional friendlies is very relative in many areas of the world. In addition, the Olympic Football Tournament is awarded a high importance within women's football, comparable to that of a Master's championship, making it the second most important women's football event behind the FIFA Women's World Cup.

Basics of the Ranking Method

The basic formula of the WWR is in fact quite simple:

$$\text{WWR}_{\text{new}} = \text{WWR}_{\text{old}} + (\text{Actual} - \text{Predicted})$$

The result of a team's match is converted into a value: "Actual". Via some formulae, the difference in rating points (strength) results in a "Predicted" value.

Should the "Actual" value be better, then the new WWR will be higher than the old one. This is fair, as the team will have delivered more than was expected. The underachiever loses the same amount of rating points as their opponents have won; their "Predicted" result is greater than their "Actual" result, i.e. they have not done as well as expected.

A conclusion that can be drawn for this basic rule is that the rating points which a team earns for a win is dependent on the strength of the opponent. A win over an extremely weak team scarcely improves their standing in the WWR, while a win over a stronger team is awarded with a clear increase of the WWR value.

Criteria for the evaluation

Actual Result of the Match

The actual match result is expressed in the "Actual Match Percentage", A. Of course winning or losing is the most important criterion, but goal difference and goals scored are also taken into account, as is shown in the following table.

Actual Match Percentage, from a non-winning perspective

Goals scored	Goal Difference						
	0	1	2	3	4	5	6 /+
0		15	8.0	4.0	3.0	2.0	1.0
1	47.5	16*	8.9	4.8	3.7	2.6	1.5
2	51	17	9.8	5.6	4.4	3.2	2.0
3	52	18**	10.7	6.4	5.1	3.8***	2.5
4	52.5	19	11.6	7.2	5.8	4.4	3.0
5	53	20	12.5	8.0	6.5	5.0	3.5

The table indicates the percentage of points that the losing team gets. The opponent is awarded the remainder of the points, except for the draw (goal difference = 0) where the opponent gets the same. Examples: *Losing by 1-2 delivers 16%, **losing 3-4 delivers 18%, while ***losing 3-8 delivers 3.8% of the available 100%.

Neutral ground or Home v. Away

To correct the value for a home advantage, the rating points of the Home team are enhanced by a value "H". A glance at the historical results shows that teams perform better at home than away; the home teams keep 66% of the points, while the opponents return home with 34%. To neutralise this effect, a correction is made by enhancing the rating of the home team by a value of 100 points (corresponding to 64%).

Importance of the match

In friendly matches, the teams representing their countries are not necessarily the best a country has to offer, whilst it is clear that in the FIFA World Cup Final two "ultimate" teams will appear. As a result, matches held at important (qualification) tournaments are a more precise measure of the strength of a team than a friendly. This element is taken into account by introducing the Match Importance "M" factor.

For matches during the World Cup final tournament, this factor is four times bigger than the value of friendly matches, and for World Cup qualifying matches the difference is a factor of three. So, at major competitions, a lot more rating points can be earned and lost.

However, for friendly matches amongst the top 10 ranked teams, the prestige of these matches make them of more importance and hence also a better estimate of the strength of the teams involved. Therefore, the friendly matches amongst the top 10 ranked teams are awarded double importance compared to regular friendlies.

The following table shows the difference in importance of the competitions:

Competition	M
FIFA Women's World Cup	40
FIFA Women's World Cup Qualifier	30
Women's Olympic Football Tournament	40
Women's Olympic Football Tournament Qualifier	30
Women's Continental Finals	30
Women's Continental Qualifier	20
Women's Friendly (amongst top 10)	10 (20)

Difference in Rating Points

The scaled difference in rating points between the two opponents "x" ($x = [r1 - r2] / \text{scaling factor}$) is used to predict the result of the match. The formula used to do so is of the form:

$$P(x) = 1 / (1 + 10^{(-x/2)})$$

Examples:

Rating point difference	Predicted value
+100	64%
+200	76%
+300	85%
-300	15%

For each team the prediction match percentage "P" is expressed in a value between 0 and 1 as a function of the difference in scaled rating points "x".

The scaling factor is chosen in such a way that the very best in the world can have rating points exceeding 2000, while the absolute beginners score around 1000 rating points.

Final Formula

Now that the ingredients of the ranking have been explained, we can introduce the real formula:

$$WWR_{new} = WWR_{old} + M * [A - P(r1+H,r2)]$$

This formula uses the following parameters:

- A** Actual Result
- M** Importance of Match
- P** Predicted value
- r1,r2** Rating points of the two team involved
- H** Correction for Home or Away match

Home/Neutral	Competition	R1	R2	Result	WWR, new	WWR, new calculation
Home	World Cup	1800	1650	3-2	1801	= 1800 + 40 * (0.83 - 0.81)
Home	World Cup	1800	1650	2-3	1774	= 1800 + 40 * (0.17 - 0.81)
Neutral	Friendly	1800	1700	4-0	1803	= 1800 + 10 * (0.97 - 0.64)
Neutral	Friendly	1800	1700	0-4	1794	= 1800 + 10 * (0.03 - 0.64)

Conclusion

With the FIFA Women's World Cup as an established feature in the international football calendar, and following the inaugural FIFA Women's U19 World Championship in Canada 2002, the launch of the FIFA Women's World Ranking is FIFA's most recent project to give impetus to one of the fastest developing areas of football activity. The FIFA WWR is designed to give a comprehensive insight into the current strength of the national teams that represent their countries in women's football. "The future of football is feminine".

Note

Following a first evaluation of the Women's World Ranking in November 2004 two changes in the ranking procedure were implemented, first taking effect in the March 2005 ranking.

The first change was an increase of the so-called K-factor, which is reflected in an increase of the various M-factors (importance of a match). The higher this K-factor, the more weight is attributed to the most recent result and the more quickly the rating adapts to recent results.

The second change is related to the importance of friendly matches. Because of the higher prestige of friendly matches between top teams, an extra rule was introduced to double the importance (M-factor) of friendly matches between two teams currently in the top 10.



FIFA Women's World Ranking – criteria for inclusion in the Ranking

Officially Ranked

The ranking of a team is deemed official when:

- They have played at least 5 matches against teams with an official ranking
- Teams that are inactive during the last four years are not listed
- Only teams who had played 5 matches before the 1999 World Cup against teams that had themselves played 5 matches before the 1999 World Cup were included in the inaugural FIFA Women's World Ranking

Display on ranking page

- Teams with an official ranking are shown in regular format
- Teams without an official ranking are displayed in grey (i.e. faded) italics
- If a team was not ranked at all on 31 December 2002, the ranking at the end of 2002 is displayed as "-"

Display on match overview

- If an officially ranked team plays a match against a team without an official ranking, the "points difference" column is filled with "-"
- There is no rating difference for matches played by teams with an official ranking
- For periods during which a team does not have an official ranking, the rating points difference column is empty
- In periods during which a team does not have an official ranking, matches against non-ranked teams are not taken into account
- In periods during which a team does not have an official ranking, matches against ranked teams are used to initialise the ranking. The initialisation result is shown in grey italics