Where Do Developing Countries Go After Doha? An analysis of WTO positions and potential alliances

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Abstract

In the wake of the November 2001 Ministerial Conference in Doha, the positions of most members of the World Trade Organisation diverge, reflecting a large extent of disagreement within the organisation. This paper attempts to organise these positions and thereby inspire a debate on the possibility of collusion in the coming round of trade negotiations with a particular focus on the options of developing countries. Members' positions on a range of issues identified as important in the coming round are rated and used as inputs in a correlation analysis and two forms of cluster analyses to identify potential alliances between members with reasonably similar positions. The paper identifies nine clusters of countries that are internally similar. Among these clusters, the positions of most developing countries are most similar to the positions of the so-called Cairns group and the US, whereas the European Union and Norway are significantly isolated and positioned far away from the developing countries. The paper concludes that developing countries have opportunities of forming alliances with specific developed countries in order to promote their trade objectives in the coming round of negotiations.

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Introduction

The Ministerial Conference in Doha, November 9-15 2001, aimed at agreeing on the directions for the next round of negotiations in the Word Trade Organization (WTO). Following the failure of the 1999 Seattle meeting and the September 11 terror attack, most countries were both better prepared and more willing to negotiate all areas of the trade agenda at the Doha meeting. As a consequence, following the meeting most countries now agree on the desired direction on many issues, an agreement reflected in the three official documents.[2] However, on the threshold of a new round of negotiations, a few issues stick out where key players strongly disagree.

Among the most disputed issues, agricultural protection and support remains an unfinished agenda in the WTO. Average barriers to agricultural imports in the developed countries remain high, reaching 152 % in Norway, which limits the market access of developing countries.[3] Nevertheless, recent studies from e.g. the World Bank document the importance of market access for economic growth and development and the substantial impact that a liberalization of world trade could have for developing countries.[4] In particular, developing countries account for 43 % of total world agricultural trade that, when liberalized, creates 70 % of the beneficial impacts in the World Bank study. As a consequence, many developing countries are actively seeking to work towards a liberalization of agricultural world trade, but stand divided on a number of other issues. Their bargaining strength within the WTO is therefore relatively limited. In order to gain the necessary strength, developing countries must collaborate with each other and with developed countries.

Building on a survey of the current positions of the WTO members on these central, but disputed issues, it is therefore the aim of this paper to perform a stringent analysis of the positions with a view to identifying developing countries' possible negotiation partners and strategies in the Doha Round. The paper is organized as follows: the first section summarizes the main findings of a recent survey and rates the positions of member countries on market access issues, export support, domestic support and various non-trade concerns. Thereafter, two formal approaches, correlation analysis and cluster analysis, are employed to measure the overall degree of contention in the WTO and to identify 'natural' groups of negotiation partners based on these ratings. The paper concludes by summarizing the positions of the key players and any potential strategic alliances identified in the analysis that developing countries could pursue in order to benefit from the coming round of WTO negotiations.

1. WTO positions – a data set

The disputed issues identified in a recent working paper can be categorized under four headings: (1) market access issues, covering tariffs, tariff rate quotas, standards and the special safeguard clause; (2) positions on export support and state trading positions; (3) domestic support, i.e. the green, blue and amber boxes, the question of a future development box, *de minimis* levels and the aggregate support measure; and (4) various non-trade concerns expressed by members including positions on a broad vs. a narrow round, labor standards, environmental concerns, geographical indicators and the so-called 'multifunctionality' of agriculture.[5] Table 1 lists the issues forming the foundation for the subsequent analyses. As explained below, not all these issues made it to the final data set.

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[2] Ministerial Declaration; Declaration on the TRIPS Agreement and Public Health; Implementation-Related Issues and Concerns; WTO Ministerial Conference, Fourth Session; WTO, Geneva.

[3] Mary E. Burfisher, *The Road Ahead: Agricultural Policy Reform in the WTO – Summary Report*, Agricultural Economic Report 797, Economic Research Service, US Department of Agriculture, 2000.

[4] E.g. *Global Economic Prospects and the Developing Countries 2002*, Report, the World Bank, Washington DC, 2001.

[5] Christian Bjørnskov and Kim Martin Lind, *Where Do Developing Countries Go After Doha?*, FOI working paper 01/2002, Danish Research Institute of Food Economics, Copenhagen.

TABLE 1. Negotiation issues in the data set

	Market access	Export support	Domestic support	Non-trade concerns
Included in the analyses	Tariffs Tariff peaks and escalation Tariff rate quotas Special safeguard clause	Export subsidies Export credits	Green box Blue box Development box Aggregate measure of support De minimis levels	Broad versus narrow round Labor standards and environment
Excluded from the analyses	SPS standards	State trading	Amber box	Geographical indicators Multifunctionality

The data reflecting the official positions of WTO members on these issues are based on information collected from three primary sources: proposals submitted to the agricultural negotiations in 2000 and 2001, official statements during these negotiations, and official statements and declarations during and following the Doha meeting. It proved impossible to find sufficient information on 24 members of the WTO.[6] The data therefore only include the positions of the remaining 120 members immediately following the Doha meeting, i.e. as of ultimo November 2001.

Each country receives a rating on each issue distributed on a scale from zero to four where a higher rating indicates more dedication to trading free of any barriers or support. The rating 'zero' reflects support for expanding the current provisions and possibilities for support and protection; a rating of 'one' reflects support for keeping the current WTO provisions unchanged, but including the so-called broad agenda issues, i.e. a number of non-trade concerns; the rating 'two' reflects support for reducing tariffs and domestic support, but with special and differential treatment or exemptions given to developing countries, in some cases also transition economies; the rating 'three' reflects a desire to reduce tariffs or domestic support, i.e. to increase global market access; and a rating of 'four' reflects that a country wants to eliminate or substantially reduce tariffs and domestic support, and have a new round of negotiations as narrow as possible.

Kenya provides an illustrative example of the basis on which ratings are given. The country has participated in four joint proposals to the agricultural negotiations. A proposal on special and differential treatment with eight other countries, which advocates for a development box, implies that Kenya receives the rating zero on the question of a development box.[7] Kenya also participated in joint proposals on green box measures with ten other countries and on market access with eleven other countries and signed the joint African Group proposal.[8] In addition, Kenya had its own proposal, arguing for a "complete elimination of all trade-distorting subsidies by developed countries", implying that the country receives a rating of 4 on all domestic support issues.[9] These

[6] The 24 members not included in the data set are Bahrain, Bangladesh, China, Cyprus, the EU (as single entry, all 15 member countries are represented), Georgia, Iceland, Kuwait, Liechtenstein, Maldives, Malta, Moldova, Oman, Panama, Papua-New Guinea, Qatar, Romania, Solomon Islands, Taiwan, United Arab Emirates and a few overseas territories listed as independent members.

[7] *Agreement on Agriculture: Special and Differential Treatment and a Development Box, Proposal to the June 2000 Special Session of the Committee on Agriculture*, G/AG/NG/W/13, WTO, Geneva, June 2000.

[8] *Agreement on Agriculture: Green Box / Annex 2 Subsidies, Proposal to the June 2000 Special Session of the Committee on Agriculture*, G/AG/NG/W/14, June, WTO, Geneva, June 2000; *Market Access*, G/AG/NG/W/37, WTO, Geneva, September 2000; and *WTO African Group: Joint Proposal on the Negotiations of Agriculture*, G/AG/NG/W/142, WTO, Geneva, March 2001.

[9] *WTO Negotiations on Agriculture. Proposal by Kenya*, G/AG/NG/W/136, WTO, Geneva. March 2001.

ratings have in some cases been adjusted after reading the official statements during and after the Doha meeting.[10]

Contrary to Kenya, Norway receives the rating zero on its position on AMS, which reflects that the country wants to move in the opposite direction by allowing increasing levels of support, including potentially trade-distorting measures. The rating two, which Côte d'Ivoire receives on the subject of AMS, in general implies a yes to liberalization or domestic support reductions, but with special and differential treatment of developing or transition countries.

As a final example, the EU has submitted six proposals and four official statements during the agricultural negotiations, and sixteen official statements during the Doha meeting. After the meeting, the EU released several statements to the international press. These documents formed the basis for rating the EU positions. On the question of a broad or narrow round, the EU receives a one reflecting that the Union wants a very broad and comprehensive round by bringing in a number of non-trade concerns. Likewise, the rating of one on labor standards and the environment reflects much the same, while the ratings of one on TRQ sizes and the green and blue boxes reflect that the EU wants no changes to the current WTO framework regarding these issues. On the question of export subsidies, the EU receives the rating zero. This extreme rating has been given as a reflection of the strong desire of the EU to couple negotiations on export subsidies with several other issues, the fact that EU resistance to discuss this issue prolonged the Doha meeting by a day, and further as a reflection of the contents of a press release issued the day after the meeting, where EU Commissioner Fischler attempted to disassociate the EU from the aim of the official Doha declaration.[11]

This approach implies rating 120 countries on 13 different issues, and hence forms a data set of 1560 ratings. However, ratings are lacking where countries have not indicated a clear position in any of the surveyed proposals and statements. As a consequence, the data consists of 1031 ratings and 529 missing data points. In the following analyses, these missing data points are replaced by the WTO average rating on the issue in question in order to introduce the least noise and distortions in the analyses for which the data set was created.

Positions

Table 2 below shows the severe disagreement on market access issues. The EU positions in particular are far from the average attitudes to market access and trade liberalization among WTO members, a feature that will show its importance in the analyses in the following section. The table also documents the disagreement on issues of export support, and in particular the severe problems associated with reaching a consensus on whether and how to limit the use of export subsidies.

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[10] *Kenya. Statement by the Honourable Kipyator N.K. Biwott, Egh, MP, Minister for Trade and Industry*, WT/MIN(01)/ST/81, WTO, Geneva, November 11 2001. All relevant documents can be downloaded at the official WTO website at www.wto.org.

[11] *"New WTO round slap in the face for isolationism", says EU Farm Commissioner Fischler*, EU Press Release, November 14 2001.

Table 2. Positions on market access and export support

	Tariffs		Escalation and peaks		TRQ size		Special safeguard		Export subsidies		Export credit	
Canada	Reduce	3	Reduce	3	Increase	3	-		Eliminate	4	Discipline	2
Djibouti	Exempt	2	Reduce	2	Increase	3	Review	3	Eliminate	4	Discipline	2
EU	-		-		Maintain	1	Maintain	1	Maintain	0	Discipline	2
Japan	-		-		-		-		Reduce	3	Discipline	2
Norway	Exempt	2	Reduce	2	Increase	3	Maintain	1	Discipline	2	-	
US	Reduce	3	Reduce	3	Increase	3	Review	3	Eliminate	4	Discipline	2
Average	2.35 (0.48)		2.88 (0.84)		2.70 (0.78)		2.18 (0.92)		3.20 (1.51)		2.31 (0.71)	

Note: parentheses beside the averages are standard deviations. 'Exempt' means that Norway wants certain agricultural products (produced in Norway) exempted from any reduction commitments. On the issues of tariffs, the EU has not revealed an unequivocal position. As Djibouti has submitted no proposals of its own, the country is selected as representing a 'pure' African Group position.

This disagreement is further underlined by members' positions on domestic support, which in some instances are intricately intertwined with the positions on market access. The US position on domestic support is clear: the green box should be reviewed with a view towards a possible inclusion of rural development initiatives, while the rest of the agricultural support (blue and amber boxes) should be eliminated.[12] Canada and most of the rest of the Cairns Group go even further in stating that all domestic support should be phased out, except for some support measures in developing countries.

Table 3. Positions on domestic support

	Green box		Blue box		Development		*De minimis*		AMS	
Canada	Review	2	-		In green	2	Reduce	3	Eliminate	4
Djibouti	Reduce	3	Eliminate	4	In green	2	-		Flexibility	2
EU	Maintain	1	Maintain	1	In green	2	Maintain	1	Reduce	3
Japan	Expand	0	Maintain	1	In green	2	Maintain	1	-	
Norway	Maintain	1	Maintain	1	New box	0	Expand	0	Expand	0
US	Review	2	Eliminate	4	-		Reduce	3	Reduce	3
Average	2.38 (1.20)		3.17 (1.32)		1.49 (0.88)		1.82 (1.00)		2.66 (0.80)	

Note: parentheses beside the averages are standard deviations. The Norwegian ratings on *de minimis* levels and AMS reflect the country's strong support for including support for 'multifunctionality'. As Djibouti has submitted no proposals of its own, the country is selected as representing a 'pure' African Group position, which wants flexibility for developing countries on the question of AMS reductions.

The position of the EU is somewhat ambiguous. On the one hand, the EU countries are ready to commit to AMS reductions, but on the other hand, the union wishes to maintain both the blue and green box, and in addition introduce support for multifunctionality for all countries in the green box. A few countries, most notably Norway, go as far as wanting to expand the opportunities for supporting agriculture in all boxes. The disagreement is illustrated by the ratings in table 3.

Countries wanting to maintain or expand the current provisions for domestic support in general also want a broad round including non-trade concerns. However, as can be seen in table 4, there is hardly any consensus on whether or not to include non-trade concerns in the Doha Round. The low averages mainly reflect that mostly rich countries have expressed an official position on the issues,

[12] The US officially wants domestic support for agriculture split into two groups: distortionary and non-distortionary measures (presently in the green box) with a view to eliminating all distortionary measures (*Note on Domestic Support Reform. Agricultural Negotiations, submission from the United States*, G/AG/NG/W/36, WTO, Geneva, June 2000). Norway has proposed a similar arrangement, although with a significantly different policy objective (*WTO Agricultural Negotiations. Proposal by Norway,* G/AG/NG/W/101, WTO, Geneva, January 2001).

whereas most developing countries have only official positions on market access and domestic support, and as such may support a narrow round implicitly.

TABLE 4. Positions on non-trade issues

	Broad vs. narrow		Non-trade concerns		Labor standards		Environment	
Canada	Broad	2	-		-		-	
Djibouti	-		-		-		-	
EU	Very broad	1	Support	1	Support	1	Support	1
Japan	Very broad	1	Support	1	-		Weak	2
Norway	Very broad	1	Extreme	0	Support	1	Support	1
US	Very narrow	4	Opposed	3	-		-	
Average	2.27 (1.27)		1.78 (1.13)		2.10 (1.29)		2.15 (1.17)	

Note: parentheses beside the averages are standard deviations. The Canadian position on a broad vs. narrow round seems to reflect the countries' environmental concerns. The position 'in TRIPS' implies that countries believe that the issue should be treated within the current TRIPS framework. As Djibouti has submitted no proposals of its own, the country is selected as representing a 'pure' African Group position.

It must be stressed that the tables above only present positions on a few key players, although all 120 WTO members were rated on all 16 issues. The tables also include issues that have been treated as contended in previous studies, but are not included in the present analyses.[13] Specifically, the issues of amber box support, geographical indicators and state trading enterprises (not shown in Table 2) are excluded from the analyses, as the Doha meeting reached a consensus on either how to treat them or to postpone the discussions. Due to high correlations between positions on broad vs. narrow round and non-trade concerns (multifunctionality), and labor and environmental standards, respectively, these four variables have been collapsed into the two variables 'broad vs. narrow round' and 'labor and environmental standards'.

The ratings thus form a data set with an explicit balance between issues under the four headings. This particular balance, i.e. that the set contains data on four issues relating to market access, two issues relating to export support, five issues relating to domestic support, and two issues relating to non-trade concerns, has been chosen as a reflection of the weight attached to these 13 issues in the actual WTO negotiations. This carefully balanced data set subsequently forms the basis for analyzing the positions of members of the organization.

2. Analyzing the positions

In making an attempt to identify which countries agree the most, i.e. answering whether there are any 'natural' coalition partners in the Doha round, two forms of analysis are presented. Both analyses are performed on the data set presented in this section. First, a correlation analysis of the ratings is presented, which provides a preliminary overview. Secondly, based on the ratings, a cluster analysis identifies groups of potential negotiation alliances in the Doha Round.

Correlation analysis

A correlation analysis was performed on three slightly different data sets: a correlation matrix based on the simple, non-weighted ratings; a matrix based on ratings weighted with countries' GDP as indicative of the relative negotiation strength or willingness to invest in the negotiations of each country; and a matrix based on ratings weighted with countries' trade as a percentage of GDP to

[13] See for example William M. Miner, *An Overview of the Issues and Positions of the Major Countries in the WTO Negotiations*, the Estey Centre Journal of International Law and Trade Policy, 2: 1, (2001) pp. 10-34.

capture the relative interest in trade. These analyses perform the task of providing a preliminary overview of any potential WTO factions or alliances.

In general, the weighted matrices produce results very similar to the results obtained in the simple matrix, although the weights should serve to exacerbate any differences in bargaining power. As a consequence, only results in the correlation matrix derived from the original data set are reported in the following. Table 5 outlines which countries' positions correlate with key players in the Doha round. For the sake of exposition, the extreme case of Norway is also reported in the table.

TABLE 5. High correlations with key players

	Countries with correlation>0.5 in un-weighted matrix
Canada	Australia, Brunei, Burma, Chile, Costa Rica, Dominica, Ecuador, Estonia, Grenada, India, Japan, Jordan, Mexico, Mongolia, Philippines, St. Kitts, St. Lucia, Singapore, Slovak Republic, Slovenia, Suriname, Swaziland, Switzerland, Thailand, Trinidad, Tunisia, Turkey, Uruguay and Venezuela
African Group	Australia, Bolivia, Colombia, Dominica, Ecuador, Egypt, Estonia, Grenada, Jamaica, Lithuania, Mongolia, New Zealand, St. Kitts, St. Lucia, Slovenia, South Africa, Suriname, Trinidad, Tunisia, the US, Uruguay and Venezuela
European Union	Israel
India	Albania, Barbados, Canada, The Democratic Republic Congo, Cuba, Ecuador, Estonia, Japan, Jordan, Mexico, Mongolia, Philippines, St. Vincent, Slovenia, South Korea, Switzerland and Thailand
Japan	Barbados, Canada, the Democratic Rep. Congo, Cuba, Haiti, India, Nicaragua, Peru, Singapore and Turkey
Norway	Antigua, Barbados, The Democratic Republic of the Congo, Indonesia and Nigeria
South Africa	The African Group, Argentina, Australia, Bolivia, Brazil, Brunei, Chile, Colombia, Costa Rica, Fiji, Guatemala, Jamaica, Malaysia, Morocco, New Zealand, Paraguay, Thailand, Uruguay and the US
United States	The African Group, Australia, Brazil, Brunei, Chile, Colombia, Costa Rica, Fiji, Guatemala, Mexico, New Zealand, Paraguay, South Africa and Uruguay

Note: Colombia and New Zealand correlate highly (>0.85) with the US. Where countries match the African Group, the match is with the general positions held by the group, exemplified by Djibouti and not necessarily with African countries having special positions on selected issues.

The table shows that only one country agrees strongly with the EU, namely Israel. Canada seems to agree with parts of the Cairns Group, and South Africa not surprisingly agrees with the African Group. However, contrary to official declarations, the simple correlation analyses demonstrate that the EU is not a staunch defender of developing countries in the WTO like the Union portrays itself. Most of the African Group actually has a large negative correlation with EU positions, cf. table 6. The African Group agrees much more with the Cairns Group and the US on these WTO-related issues. Table 5 also demonstrates the peculiar finding that the positions of Norway are supported by a rather heterogeneous group of countries in the WTO.

Another vital question in the next round of negotiations sought answered by the simple correlation analysis is whether the key players agree? A tentative answer follows from the table below. The table illustrates the disagreement between central players in the WTO. The Canadian position, supporting tariff reductions and more free trade, but with tangible special provisions for developing countries, seems to be close to the average. The EU position is closest to Japan, but otherwise in strong opposition to the other main players, Canada, South Africa and the US. These differences are also evident in the more formal cluster analyses discussed below.

Table 6. Correlations between key players

	Canada	Djibouti	European Union	India	Japan	Norway	South Africa	United States
Canada	1	0.30	0.08	0.60	0.51	-0.24	0.07	0.40
Djibouti	0.30	1	-0.69	0.17	-0.07	0.00	0.68	0.54
European Union	0.08	-0.69	1	0.02	0.32	0.09	-0.68	-0.36
India	0.60	0.17	0.02	1	0.62	0.20	-0.24	0.00
Japan	0.51	-0.07	0.32	0.62	1	0.38	-0.43	0.16
Norway	-0.24	0.00	0.09	0.20	0.38	1	-0.28	-0.22
South Africa	0.07	0.68	-0.68	-0.24	-0.43	-0.28	1	0.50
United States	0.40	0.54	-.036	0.00	0.16	-0.22	0.50	1

Note: As Djibouti has submitted no proposals of its own, the country is selected as representing a 'pure' African Group position.

Cluster analyses

Complementing the simple correlation analysis, a number of different cluster analyses inspired by the approach adopted by Eugenio Diaz-Bonilla were performed, using the data set described above.[14] The cluster analyses start with a hierarchical method where clusters are merged according to the smallest increase in a dissimilarity index following Ward's method, which yields the suitable number of clusters. Taking the number as given, the clusters are further refined using a non-hierarchical method, k-means, which maximizes the Euclidean distance between cluster centers while minimizing the distance between members of any given cluster.

Hierarchical clustering

The hierarchical clustering technique starts out with 120 clusters each comprising one country. At each subsequent stage in the cluster analysis the two clusters closest to each other are merged, and the procedure continues with diminishing numbers of clusters until all countries have been merged into one cluster. The particular number of clusters and their composition at each stage is called a partition. The task of the analyst is then to choose the partition that provides the 'best' number of clusters and distribution of countries, and thus the 'best' empirical structuring of the data.[15]

To determine the best partition, i.e. the number of clusters, several indicative measures are used: a cubic clustering criterion (CCC), a pseudo t-test, a pseudo F-test, and the squared multiple correlation (R^2). The cubic clustering criterion shows whether the constituents of a particular cluster comprise a homogenous whole. If a cluster has become too heterogeneous by accumulating too many countries of too varied a nature, the CCC displays this. Furthermore, the evolution of CCC and the pseudo t- and F-tests during the hierarchical clustering procedure provides guidelines by which to choose the 'best' number of clusters and, consequently, the 'best' partition. Good clusters, i.e. clusters that have constituents forming a homogenous whole, should have a CCC bigger than two or three.

Applying Ward's hierarchical clustering technique to the data described above yields a number of clusters consisting of countries with relatively common goals in the WTO. The clusters computed by this method are displayed in table 7. The cluster number shows at what stage in the hierarchical

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[14] See Eugenio Diaz-Bonilla, Thomas, Sherman Robinson and Andrea Cattaneo, *Food Security and Trade Negotiations in the World Trade Organization: a Cluster Analysis of Country Groups*, TMD Discussion Paper 59, International Food Policy Research Institute, Washington DC, 2000.

[15] For a comprehensive description of the theory and algebra of cluster analysis, see Joseph H. Hair, jr., Rolph E. Andersen, Ronald L. Tatham and William C. Black, *Multivariate Data Analysis, Fifth Edition*, (New Jersey: Prentice Hall, 1998).

procedure the cluster has been formed. Thus, the higher the number the earlier the cluster has comprised the countries shown in table 7. In general, Ward's method sorts out two main groups in the WTO composed by respectively an EU / Israel cluster and eight other clusters, respectively. In this particular partition, all clusters have a CCC bigger than eight. In addition, another indicative measure - R^2 - shows that 78% of the variation in the data is 'explained' by the chosen partition.

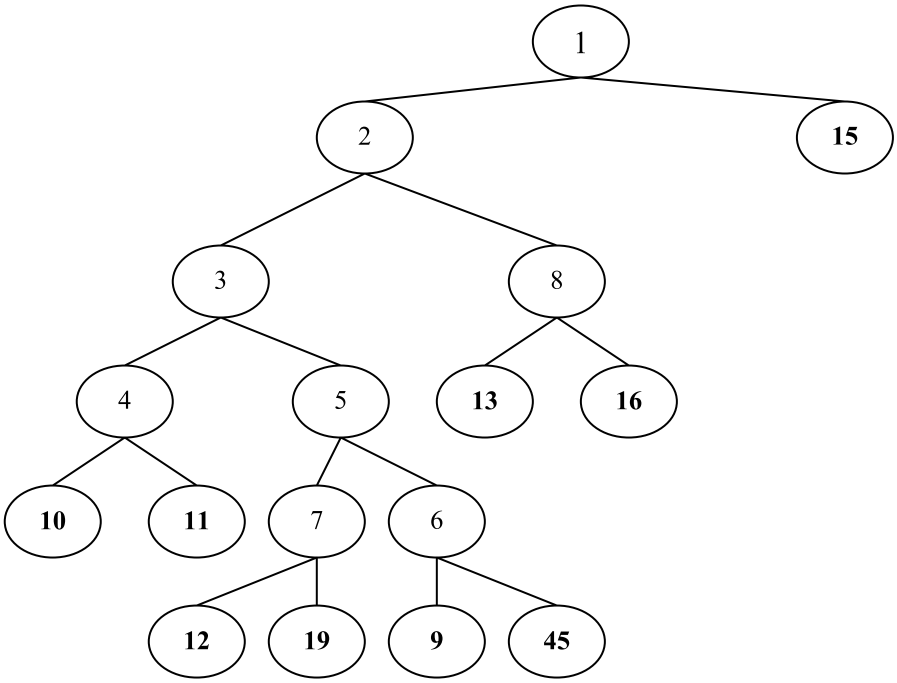
TABLE 7. Clusters, Ward's method

Cluster no.	Countries	GDP	Openness
9	The Democratic Republic of Congo, India, Japan and Norway	13,948	23
10	Argentina, Australia, Bolivia, Brazil, Chile, Colombia, Costa Rica, Fiji, Guatemala, Malaysia, Morocco, New Zealand, Paraguay, South Africa, Thailand, Uruguay and the US	9,723	26
11	Angola, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Djibouti, Gabon, the Gambia, Guinea, Guinea-Bissau, Madagascar, Malawi, Mali, Mauritania, Mauritius, Niger, Rwanda, Senegal, Sierra Leone, Tanzania, Togo, and Zambia	1,775	24
12	Albania, Antigua, Barbados, Canada, Dominica, Ecuador, Estonia, Grenada, Indonesia, Jamaica, Jordan, Mexico, Mongolia, the Philippines, Poland, St. Kitts, St. Lucia, St. Vincent, Slovenia, South Korea, Suriname, Swaziland, Switzerland, Trinidad, Tunisia and Venezuela	8,161	41
13	Cuba, Egypt, Haiti, Kenya, Nicaragua, Nigeria, Peru and Uganda	2,027	16
15	The EU and Israel	22,388	67
16	The Dominican Republic, El Salvador, Honduras, Pakistan, Sri Lanka and Zimbabwe	3,261	19
19	Benin, Brunei, Burma, Côte d'Ivoire, Ghana, Lesotho, Namibia, Singapore, the Slovak Republic and Turkey	6,766	55
45	Bulgaria, Croatia, the Czech Republic, Hungary, the Kyrgyz Republic, Latvia, Lithuania,	7,293	32
Average	All WTO	8,268	36

Note: GDP is PPP-adjusted US$ per capita, openness is trade as a percentage of GDP. The hierarchical cluster numbers correspond to those in figure 1.

Figure 1 displays the top part of the cluster tree, i.e. the cluster creation sequence, where the bold boxes denote the partition or taxonomy with nine clusters. Cluster 13 and cluster 16 merge to yield a new cluster if only eight clusters are selected. Thus, in the latter case cluster 13 merges with cluster 16. Although the cluster procedure allows for cumulating these two quite similar free-trade oriented clusters, the method suggests that the primary clusters are 'good', i.e. the general stance of these two groups of countries provides for two distinctly different clusters. Naturally, like considerations carry over if only five clusters are considered. In this case, clusters 12, 19, 9 and 45 merge to form a single cluster (cluster 5) agreeing on a need to reduce tariffs. However, choosing five clusters only explains 68 % of the variation in the data while nine clusters explain an additional ten percent by for example separating the transition countries from cluster 9. Regardless of the particular partition one wishes to choose, one outstanding feature remains, namely, that the EU/Israel cluster is isolated. The EU/Israel cluster only merges with other clusters at the very end of the procedure, namely when all countries merge to form one big cluster (cluster 1).

FIGURE 1. Cluster tree



The two main groups in figure 1, which are joined only in the last step of the clustering sequence, are significantly different. The left group of clusters is on average relatively poor (having an average GDP of 6,095 US$ per capita, of which 31 % are traded), whereas the right group is relatively rich and relatively more open (with an average GDP of 23,388 US$ per capita of which 67 % is traded). This result of the hierarchical cluster method therefore serves to underline the finding that wanting a relatively broad round of negotiations is predominantly a rich European country position.

The problem with using hierarchical methods is, however, that if a country is placed in any given cluster it is impossible to move out of the cluster although the average cluster characteristics may change significantly with the inclusion of other countries. Therefore, given the number of clusters provided by Ward's method above, a non-hierarchical method was employed in order to maximize the within-cluster similarity by allowing countries to move between clusters.

Non-hierarchical clustering

The non-hierarchical clustering method employed is the so-called k-means method. The method yields slightly more refined results than Ward's hierarchical method, although the main trends of the analysis are unaffected. In fact, the non-hierarchical method brings the results in even further concordance with the preliminary results of the correlation analysis in the beginning of this section. The clusters computed by the k-means method are shown in table 8.

TABLE 8. Clusters, k-means method

Cluster name / no		Countries	GDP	Openness
Gradual liberalization	1	Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Djibouti, Gabon, the Gambia, Ghana, Guinea, Guinea-Bissau, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Niger, Rwanda, Senegal, Sierra Leone, Swaziland, Tanzania, Togo, and Zambia	1,866	24
Market access	2	Cuba, Haiti, Nicaragua, and Peru	2,495	18
Average	3	Albania, Antigua, Brunei, Bulgaria, Burma, Canada, Croatia, the Czech Republic, Dominica, Ecuador, Estonia, Grenada, Hungary, Jamaica, Japan, Jordan, the Kyrgyz Republic, Latvia, Lithuania, Mongolia, Poland, St. Kitts, St. Lucia, St. Vincent, Singapore, the Slovak Republic, Slovenia, South Korea, Suriname, Switzerland, Trinidad, Tunisia, Turkey and Venezuela	9,160	46
Narrow round	4	Argentina, Australia, Bolivia, Brazil, Chile, Colombia, Costa Rica, Fiji, Guatemala, Honduras, Indonesia, Malaysia, Namibia, New Zealand, Paraguay, South Africa, Thailand, Uruguay and the US	9,087	26
Small changes	5	India, Mexico and the Philippines	4,659	20
EU / Israel	6	The EU and Israel	22,388	67
Free trade	7	The Dominican Republic, Egypt, El Salvador, Kenya, Nigeria, Pakistan, Sri Lanka, Uganda and Zimbabwe	2,599	16
Norway	8	Norway	27,981	64
Developing multifunctionality	9	Barbados and the Democratic Republic of Congo	7,391	18
		All WTO	8,268	36

Note: GDP is PPP-adjusted US$ per capita, openness is trade as a percentage of GDP.

As can bee seen when comparing tables 7 and 8, there are movements between the nine clusters when the hierarchical clustering method is complemented by the non-hierarchical method. The clusters resulting from employing the non-hierarchical method, which refines the selection by maximizing the similarity of the positions of countries within the clusters, are described below. Table 9 below summarizes the distances between the clusters and thereby identifies potential allies in the WTO.

TABLE 9. Cluster distances, k-means method

		Cluster no.								
Cluster name / no.		1	2	3	4	5	6	7	8	9
Gradual lib.	1	0	4.05	**2.13**	2.29	3.41	6.38	3.65	6.00	3.84
Market access	2	4.05	0	3.05	4.01	3.53	6.34	**1.89**	6.38	3.15
Average	3	**2.13**	3.05	0	2.48	2.53	4.88	3.08	4.99	2.75
Narrow round	4	**2.29**	4.01	2.48	0	3.12	6.65	3.36	6.79	3.99
Small changes	5	3.41	3.53	**2.53**	3.12	0	5.81	4.12	5.75	2.70
EU / Israel	6	6.38	6.34	4.88	6.65	5.81	0	6.99	**4.75**	5.52
Free trade	7	3.65	**1.89**	3.08	3.36	4.12	6.99	0	6.93	3.67
Norway	8	6.00	6.38	4.99	6.79	5.75	4.75	6.93	0	**4.57**
Dev. multifunc.	9	3.84	3.15	**2.75**	3.99	2.70	5.52	3.67	4.57	0
Average		3.53	3.60	2.88	3.63	3.44	5.26	3.74	5.13	3.35

Note: the distances in bold marks minimum, i.e. the closest ally can be found by moving horizontally to the bolded figure.

Cluster 1 – gradual liberalization

As the African Group has submitted a comprehensive joint proposal, the non-hierarchical analysis quite naturally picks a separate African cluster. Although a number of African countries have submitted their own proposals and statements concerning other issues, in some cases also expressing differing positions on several issues, these differences have only made very few countries move out of the African cluster when employing the k-means method, while moving other countries in. The remaining 32 countries form a fairly homogenous cluster, agreeing on reducing domestic support substantially. Nearly all African countries want to eliminate the use of the blue box and export subsidies. Tariffs should also be reduced, but with special provisions for developing countries, i.e. enabling a gradual liberalization and integration of Africa into the world economy. However, the cluster averages also show that the African countries in general want to incorporate development measures in the green box instead of creating a development box per se. The closest ally of the African cluster is cluster 3, the average cluster.

Cluster 2 – market access
Cuba, Haiti, Nicaragua and Peru form a cluster by agreeing on wanting a complete elimination of all export support in addition to all tariff peaks and escalation and a desire to increase the TRQ sizes substantially (cf. table 10). Nevertheless, they also want additional special tariff provisions for developing countries and a development box, and very substantial reductions in domestic support. As the African cluster, the market access cluster is fairly homogenous. The closest ally of cluster 2 is cluster 7, the free trade cluster, due to the similar positions on market access and domestic support.

Cluster 3 – average
34 countries compose the average cluster, which contains virtually all transition countries in the WTO, most of the Caribbean Community (CARICOM), a few relatively wealthy developing countries and some rather protectionist developed countries. The cluster also contains Canada, which is a member of the Cairns Group. As is obvious in table 10, the cluster is close to a WTO average on both single issues and the overall position. This cluster is, however, analytically troublesome, as many of the included countries do not have official positions on most issues.[16] In other words, due to the approach taken on mitigating the problem of missing data points, the placement of several countries in cluster 3 may be spurious, although sensitivity analyses reveal that Canada, Brunei and part of the CARICOM do in all likelihood belong to the same cluster. The average cluster agrees the most with the African group, but is by definition the cluster with the least distance to any other cluster, and the smallest average distance (67 % of the average of averages), cf. table 9.

Cluster 4 – narrow round
Not surprisingly, most of the Cairns Group is clustered together in this 19-country cluster, which also contains Honduras, Namibia and the US. As is evident in table 10, this narrow round cluster is characterized by a strong opposition to bringing non-trade concerns into the WTO, i.e. the countries share an overall focus on the narrow-agenda issues. Cluster 4 is also united in wanting substantial reductions in domestic support and export subsidies, and being willing to increase the market access for all countries, but for developing countries in particular. The cluster situated closest to the narrow round countries is the African cluster.

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[16] In order to be able to perform the cluster analyses, missing data points were replaced by the overall average position on any given issue, which is an endogenous reason for forming this average cluster. Sensitivity analyses of both the correlation and cluster analyses reveal that most of the countries in cluster 3 can relatively easily be made to switch clusters. However, by placing these countries in an average cluster, the method limits problems relating to missing data points mainly to one cluster.

Cluster 5 – small changes
Cluster 5, which only contains three countries, is the most heterogeneous cluster.[17] The countries, India, Mexico and the Philippines, are united in wanting relatively substantial improvements in market access for developing countries and substantial reductions in developed countries' use of the blue box. However, the countries in cluster 5 also want significantly more opportunities for developing countries to support the agricultural sectors while developed countries' aggregate support should be reduced. Evaluated in relation to the number of missing data points in cluster 5, which tends to limit the distances between clusters by moving a cluster close to the average position, the distances to other clusters reported in table 9 are relatively large. This reflects the quite strong positions on increasing market access for developing countries while maintaining the possibilities of supporting agriculture. Yet, as a consequence of the missing data, cluster 5 agrees the most with the average cluster.

Cluster 6 – the EU and Israel
Like the correlation analysis and the hierarchical clusters, the non-hierarchical cluster method groups the EU with Israel, while showing that the positions of this cluster isolate it in the WTO. Officially, the countries are prepared to reduce tariffs, but do no want to change the current TRQ system. In addition, the cluster focuses on a very broad, comprehensive new round of negotiations, including standards on labor rights and environment, and provisions for the so-called multifunctionality of agriculture. Moreover, the cluster is opposed to reducing neither export subsidies nor domestic support in the green or blue boxes. Although far removed, table 9 illustrates that the closest ally of cluster 6 is Norway. It should be noted that while receiving substantial amounts of development assistance from Europe, most African countries strongly disagree with the EU / Israel cluster.

Cluster 7 – free trade
Table 5.9 demonstrates that the comparatively heterogeneous cluster 7 is united in a broad and strong dedication to free trade. These countries, including the Dominican Republic, Egypt and Kenya that belong to what may be termed a 'political elite' of the developing world, want asymmetric reductions in the *de minimis* levels of support to ensure that developing countries have sufficient opportunities to support adjustments and development in the agricultural sectors while reducing the overall protection of agriculture. On all other issues, the countries are working for substantially increased market access and a nearly complete ultimate elimination of domestic support, in addition to being against the introduction of non-trade concerns in the WTO. As such, the market access position and the opposition to domestic support unite the free trade cluster with cluster 2, which is a rather close ally, demonstrated by the low distance in table 9. For similar reasons, cluster 7 is very far removed from the positions of the EU, Israel and Norway.

Cluster 8 – Norway
In the hierarchical clusters, Norway was united with the Democratic Republic of Congo, India and Japan in a 'multifunctionality' cluster. One of the results of refining the clustering is that Norway is fully isolated from the position of any other country. Norway wants a broad round with increased market access for developing countries and a development box. However, the country also wants to increase the opportunities for supporting agriculture, especially by allowing support measures for

[17] The within-cluster standard deviation of the ratings is 0.67, compared to an overall average standard deviation of 0.46 for all clusters. In fact, the Indian positions have a correlation of only 0.53 with the Philippine positions.

the ‘multifunctionality’ of agriculture.[18] As such, although being almost as isolated as the EU / Israel cluster, Norway agrees slightly more with the developing countries wanting multifunctionality in cluster 9.

Cluster 9 – developing multifunctionality
The relatively small distance between cluster 9 and Norway partly reflects the multiple meanings that WTO members attach to the multifunctionality concept. The cluster, which is united in a strong support for allowing distortionary support to be used in developing countries, consists of only two countries: Antigua and the Democratic Republic of Congo. The few official positions of the countries are not particularly similar and the similarity to the Norwegian position on allowing domestic support may be entirely spurious due to both missing data points and the different meanings attached to the multifunctionality concept. Cluster 9 hence agrees the most with the average group.

The clusters: an overview
The analyses above identify, which countries could be potential allies in the WTO. As an addition to the descriptions, table 9 lists the distances between all clusters. The table clearly illustrates the similarity between the findings of both types of analysis, showing that the EU and Norway are isolated and that the Canadian group, cluster 3, is relatively close to a WTO average position, listed in the bottom row.

By studying table 9 and 10, it is relatively easy to get an impression of the common picture of WTO positions before the Doha round of negotiations starts and identify potential coalition partners, i.e. friends and foes.

Correlation and cluster analyses – potential alliances?
A number of features follow from both the correlation analysis and the cluster analyses. As referred to above, table 10 illustrates the average cluster positions on the three main topics, thereby adding to explaining these cluster formations.

TABLE 10 Average cluster positions, k-means method, main topics

	Cluster no.									
	1	2	3	4	5	6	7	8	9	Av.
GDP per capita, US$	1,866	2,495	9,160	9,087	4,659	22,388	2,599	27,981	7,391	8,268
Trade as % of GDP	24	18	46	26	20	67	16	64	18	36
Market access	2.54	2.75	2.64	2.83	2.43	1.84	3.06	2.00	2.33	2.46
Export support	2.95	4.00	2.77	2.95	3.10	1.01	2.81	2.15	3.38	2.91
Domestic support	2.61	2.28	2.21	2.67	2.19	1.63	2.47	0.40	1.45	1.99
Non-trade concerns	2.32	2.10	2.21	3.31	2.26	1.04	3.02	1.00	2.30	2.17
Total cluster average	2.60	2.66	2.43	2.86	2.42	1.51	2.88	1.25	2.15	2.31

Note: GDP per capita is PPP-adjusted. All figures are simple averages.

In summary, using correlation and cluster analyses on the rated WTO positions, the following findings emerge:

- The EU / Israel position is isolated in the WTO, as the significant distances in table 9 document. The closest ally is Norway, which is comparably isolated. Both clusters are advocating for bringing additional support to agriculture by allowing potentially distorting

[18] It must be stressed that Norway – one of the richest countries in the world – has extremely high agricultural tariffs averaging 152 %, and substantial support to its vastly uncompetitive agricultural sector.

support to so-called 'multifunctionality'. As can be seen in table 10, these countries are rich and open to trade.

- A small group of multifunctionality / high special treatment developing countries emerge, consisting of Antigua, the Democratic Republic of Congo, India, Mexico and the Philippines, which are primarily backed in their objectives by Norway. These middle-income countries, averaging a GDP of US$7391, are trading relatively little.
- Latin American countries end up either in a small cluster (Cuba, Haiti, Nicaragua and Peru, i.e. countries doing relatively poorly), a closely related small cluster including relatively wealthier developing countries, or a related Cairns Group cluster, heavily devoted to free trade and thereby positioned close to the other clusters. The latter cluster, which is relatively rich but less open than the average WTO country, also includes the US. As illustrated by table 10, the other clusters including Latin American countries are relatively poor and closed, but significantly more devoted to free trade than any other groups of countries.
- The Cairns / US cluster is not far removed from the cluster containing most of the African Group. The distance is only marginally larger than the distance to cluster 3, as the clusters have remarkably similar positions on export support and domestic support. This particularly robust result also follows directly from the correlation analysis.[19] As table 10 documents, the African cluster is relatively less open than the rest of the WTO and by far the poorest of the nine clusters, whereas the Cairns / US cluster is relatively rich and open.
- Finally, Canada and a number of other average position countries are placed in a cluster in the middle of the WTO with the smallest average distance to any other clusters. The countries included in this cluster are on average more open and richer than the WTO average country. However, the formation of this specific cluster is partly a result of particularly many missing data points for the countries included in the cluster. However, the correlation analysis similarly shows that Canada is relatively centrally positioned in the organization, as concluded by previous studies.

The analyses therefore point to a number of clusters or alliances between clusters with compatible policy objectives. Several developing WTO members could potentially benefit from cooperating with some of the countries situated in clusters relatively close to their own position. In particular, if the Cairns / US cluster or the two Latin American clusters should have success in reaching their official objectives in the WTO, their positions are theoretically relatively beneficial for the economic development of these countries as well as the rest of the world, based on the finding that the countries included in the cluster are officially working for a substantial reduction of domestic support to agriculture in developed countries, and a significant increase in the market access of all countries. As a multitude of studies document, a move towards these goals will lead to an increase in the welfare in virtually all countries.

Only a small number of developing countries seem to have any incentives to forming alliances with the EU or Norway. The relatively protectionist policies of these countries are in opposition to the declared interests of most developing countries, and only the unique positions of Antigua and the Democratic Republic of Congo reflect sufficiently similar objectives in the WTO negotiations. In other words, although both Norway and large parts of the EU believe themselves to be more friendly to the developing countries than the rest of the world, these countries are isolated and in strong opposition to the developing countries in the WTO. Based on the findings of the analyses,

[19] Sensitivity analyses reveal that most of the results above, with the exception of findings related to cluster 3, are remarkably robust, given the type of analysis and data.

any alliances between developing countries and either Norway or the EU / Israel cluster based on purely trade-related objectives therefore seem irrational.

3. Conclusions and policy recommendations

This article has surveyed the positions of WTO members immediately following the Ministerial Conference in Doha. It documents the severe differences among opinions on the focus and contents of the coming round of negotiations in the organization. However, a number of countries agree on several issues and as such, forming alliances with other members could be a rational strategy for many countries, and in particular for developing countries without sufficient bargaining power or administrative capacity.

Following a previous survey, thirteen particularly sensitive issues were identified. These issues were divided into four distinct topics: (1) market access – the questions of tariff reductions, tariff peaks and escalation, the sizes of tariff rate quotas, and whether to continue the special safeguard; (2) export support - the use of export subsidies and export credit; (3) domestic support – the future of the green and blue boxes, the possibility of a development box, *de minimis* levels and the aggregate measure of support; and (4) non-trade concerns - the questions of whether to have a broad or narrow round, i.e. introducing non-trade concerns, and labor and environmental standards. The information allowed for 120 WTO members to be rated on a scale from zero to four on each of these issues. This yielded a data set with 1560 entries, which was subsequently used for performing more formal analyses. The article employed two different methods in order to identify potential alliances in the WTO. First, a simple correlation analysis of the WTO positions was employed to yield a preliminary overview of the relative positions of a number of key players. Thereafter, two complementary forms of clustering methods were employed to identify the number of potential negotiation alliances and refine the identification of these alliances.

The analyses point to a number of clusters / alliances, which rationally could form in the coming round of negotiations. The main finding is that developing countries seem to be able to gain support for their opinions from players that do not normally maintain a particularly high profile on international development. Specifically, the trade policy of the African Group is quite similar to American policy objectives, to the extent that both Namibia and South Africa are clustered with the US and most of the Cairns Group in both types of analysis.

This is also the case for a number of African countries placed outside the general African Group position. A cluster including Kenya, Nigeria, Uganda and Zimbabwe is on average even more free trade oriented and could as such join forces with the Cairns Group, the US and most of Latin America. The position of these developing countries would thereby gain significantly more bargaining power through an alliance with the US and the influential Cairns countries.

The cluster containing Canada may be a potentially unifying force in the WTO as it is close to an average position. In addition, Canada has a relatively high profile on development aid and good political relations to most of the world. As a consequence, both the African Group, the Cairns / US Group and a small residue cluster of developing countries are relatively closely positioned to this cluster. Due to the disturbance introduced by missing data points in the cluster analyses, this cluster is, however, analytically problematic, and any conclusions regarding it should be correspondingly tentative.

The analyses thus show that there are ample incentives for many developing countries to join in informal or semiformal alliances with the free-trade oriented countries. Only a few relatively wealthy developing countries have official trade policy objectives substantially different from the Cairns / US cluster. These countries, which include Antigua, the Democratic Republic of Congo and India, will probably not be able to find other negotiation partners than countries in the analytically problematic cluster 3, which includes Canada and Central and Eastern Europe.

However, the analyses also show that the positions of most developing countries are in opposition to the EU and Norway in the WTO, countries that are actively promoting policies in direct conflict with the official positions of most developing countries in Africa and the Caribbean. Moreover, economic research document that these policies are detrimental to the development efforts of developing countries. The EU and Norway should therefore probably strive for a better balance between the official development-friendly attitude and the conflicting development-hostile positions in the WTO.

The outlook for the coming round of negotiations is therefore optimistic for the developing countries. Should they form alliances as analyzed in this paper, the countries could potentially be able to gain bargaining power and support for their objectives within the WTO to force significant changes. In other words, if developing countries act rationally by cooperating with partners with coinciding interests, it might actually be possible to gain what they came for in Doha.