

A PROPORTIONALITY ANALYSIS OF THE COOP-NATCCO SEAT ALLOCATION FORMULA

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1. In Table 3 of the Supreme Court decision in *BANAT vs. COMELEC*, G.R. No. 179271, April 29, 2009, COOP-NATCCO, BUTIL, BATAS, ARC, ANAKPAWIS, ABONO, AMIN, AGAP, AN WARAY obtained at least 2% of the total party-list votes and were ranked from 9 up to 17, respectively. In its footnote number 31, the following are written: "*The product of the percentage and the remaining available seats of all parties ranked nine and below is less than one*". However, each of these parties from Rank 9 up to Rank 17 was given one additional seat. Hence, these party-list groups had two seats each as shown in the table below.

Table 1: Table 3 of the Supreme Court Decision (G.R.179271).
Distribution of Available Party-List Seats

Rank	Party	Votes Garnered	Votes Garnered over Total Votes for Party List, in % (A)	Guaranteed Seat (First Round) (B)	Additional Seats (Second Round) (C)	(B) plus (C), in whole integers (D)	Applying the three seat cap (E)
1	BUHAY	1,169,234	7.33%	1	2.79	3	N.A.
2	BAYAN MUNA	979,039	6.14%	1	2.33	3	N.A.
3	CIBAC	755,686	4.74%	1	1.80	2	N.A.
4	GABRIELA	621,171	3.89%	1	1.48	2	N.A.
5	APEC	619,657	3.88%	1	1.48	2	N.A.
6	A Teacher	490,379	3.07%	1	1.17	2	N.A.
7	AKBAYAN	466,112	2.92%	1	1.11	2	N.A.
8	ALAGAD	423,149	2.65%	1	1.01	2	N.A.
9 ³¹	COOP-NATCCO	409,883	2.57%	1	1	2	N.A.
10	BUTIL	409,160	2.57%	1	1	2	N.A.
11	BATAS	385,810	2.42%	1	1	2	N.A.
12	ARC	374,288	2.35%	1	1	2	N.A.
13	ANAKPAWIS	370,261	2.32%	1	1	2	N.A.
14	ABONO	339,990	2.13%	1	1	2	N.A.
15	AMIN	338,185	2.12%	1	1	2	N.A.
16	AGAP	328,724	2.06%	1	1	2	N.A.

17	AN WARAY	321,503	2.02%	1	1	2	N.A.
18	YACAP	310,889	1.95%	0	1	1	N.A.
19	FPJPM	300,923	1.89%	0	1	1	N.A.
20	UNI-MAD	245,382	1.54%	0	1	1	N.A.
21	ABS	235,086	1.47%	0	1	1	N.A.
22	KAKUSA	228,999	1.44%	0	1	1	N.A.
23	KABATAAN	228,637	1.43%	0	1	1	N.A.
24	ABA-AKO	218,818	1.37%	0	1	1	N.A.
25	ALIF	217,822	1.37%	0	1	1	N.A.
26	SENIOR CITIZENS	213,058	1.34%	0	1	1	N.A.
27	AT	197,872	1.24%	0	1	1	N.A.
28	VFP	196,266	1.23%	0	1	1	N.A.
29	ANAD	188,521	1.18%	0	1	1	N.A.
30	BANAT	177,028	1.11%	0	1	1	N.A.
31	ANG KASANGGA	170,531	1.07%	0	1	1	N.A.
32	BANTAY	169,801	1.06%	0	1	1	N.A.
33	ABAKADA	166,747	1.05%	0	1	1	N.A.
34	1-UTAK	164,980	1.03%	0	1	1	N.A.
35	TUCP	162,647	1.02%	0	1	1	N.A.
36	COCOFED	155,920	0.98%	0	1	1	N.A.
Total				17		55	
³¹ : <i>The product of the percentage and the remaining available seats of all parties ranked nine and below is less than one.</i>							

- The seat allocation formula of the said Supreme Court ruling which we shall call as the **CARPIO FORMULA** has two rounds of seat allocation. *The first round is the distribution of one guaranteed seat to those party-list groups that obtain at least 2% of the total party-list votes (TPLV). The second round is the distribution of additional seats* and it has two phases. The first phase of the second round computes the “*product of the percentage and the remaining available seats*” after the guaranteed seats are awarded in the first round. An additional number of seats is given that is equivalent to the integral part of this product, if there will be more than 2 additional seats, only 2 seats will be given.

If there are still available seats after the first phase of the second round, *one seat is given to the top ranking parties in the list including those parties that garnered at least two percent of the total party list votes but did not receive an additional seat in the first phase of the second round until all the seats are filled up.*

3. If the **CARPIO FORMULA** is applied to **Canvass Report No. 8 of the 2010 Party List Election** where the votes of the **32 party-list groups** excluded by the COOP-NATCCO Petition (to be consistent with that of **COOP-NATCCO**), we will have the following allocation of seats on each party as shown in **Table 2**.

Rank	New Rank	Party-List	Votes Garnered	Percentage	1st Rd	Percentage x Remaining Seats	2nd Rd	Seats Allocated
1	1	AKB	1,522,986	5.2849072%	1	2.3782082	2	3
2	2	SENIOR CITIZENS	1,292,182	4.4839952%	1	2.0177978	2	3
3	3	BUHAY	1,249,555	4.3360754%	1	1.9512339	1	2
4	4	AKBAYAN	1,058,691	3.6737591%	1	1.6531916	1	2
5	5	GABRIELA	1,001,421	3.4750267%	1	1.5637620	1	2
6	6	COOP-NATCCO	943,529	3.2741359%	1	1.4733612	1	2
7	7	1-CARE	768,829	2.6679102%	1	1.2005596	1	2
8	8	ABONO	766,615	2.6602274%	1	1.1971023	1	2
9	9	BAYAN MUNA	746,019	2.5887573%	1	1.1649408	1	2
10	10	AN WARAY	711,631	2.4694277%	1	1.1112425	1	2
11	11	CIBAC	647,483	2.2468280%	1	1.0110726	1	2
12	12	A TEACHER	614,725	2.1331546%	1	1	1	2
13	13	AGAP	515,501	1.7888378%	0	1	1	1
14	14	BUTIL	506,703	1.7583079%	0	1	1	1
15	15	ABC	469,093	1.6277976%	0	1	1	1
16	16	ANAKPAWIS	445,628	1.5463718%	0	1	1	1
17	17	KABATAAN	417,923	1.4502328%	0	1	1	1
18	18	LPGMA	417,600	1.4491120%	0	1	1	1
19	19	ABAMIN	376,011	1.3047942%	0	1	1	1
20	20	ACT TEACHERS	369,564	1.2824224%	0	1	1	1
21	21	AAMBIS-OWA	357,009	1.2388554%	0	1	1	1
22	22	YACAP	335,635	1.1646856%	0	1	1	1
23	23	APEC	313,359	1.0873857%	0	1	1	1
24	24	ANG KASANGGA	296,368	1.0284253%	0	1	1	1
25	25	BH	292,875	1.0163043%	0	1	1	1
26	26	ANAD	292,057	1.0134657%	0	1	1	1
27	27	AG	269,009	0.9334870%	0	1	1	1
28	28	AGBIAG	262,298	0.9101992%	0	1	1	1
29	29	PBA	258,498	0.8970128%	0	1	1	1
30	30	ABS	257,301	0.8928591%	0	1	1	1

31	31	TUCP	244,623	0.8488652%	0	1	1	1
32	32	AGHAM	241,898	0.8394092%	0	1	1	1
33	33	DIWA	238,675	0.8282251%	0	1	1	1
34	34	KAKUSA	234,717	0.8144905%	0	1	1	1
35	35	KALINGA	229,198	0.7953390%	0	1	1	1
36	36	ALAGAD	227,116	0.7881143%	0	1	1	1
37	37	1-UTAK	220,002	0.7634280%	0	1	1	1
38	38	1 ANG PAMILYA	217,032	0.7531218%	0	1	1	1
39	39	AVE	214,760	0.7452378%	0	1	1	1
40	40	AT	176,074	0.6109936%	0	1	1	1
41	41	ATING KOOP	173,711	0.6027938%	0	1	1	1
42	42	ALIF	170,304	0.5909712%	0	1	1	1
43	43	ALE	167,654	0.5817754%	0	1	1	1
44	44	AA-KASOSYO	166,432	0.5775350%	0	0	0	0
45	45	ALAY BUHAY	163,164	0.5661947%	0	0	0	0
46	46	AKMA-PTM	161,674	0.5610243%	0	0	0	0
47	47	KAABAY	160,745	0.5578005%	0	0	0	0
48	48	AMIN	157,733	0.5473486%	0	0	0	0
49	49	VFP	154,183	0.5350298%	0	0	0	0
50	50	ARARO	147,204	0.5108120%	0	0	0	0
51	51	ATONG PAGLAUM	145,435	0.5046734%	0	0	0	0
52	52	PACYAW	143,151	0.4967477%	0	0	0	0
53	53	ATM	142,013	0.4927987%	0	0	0	0
54	54	ANAK	141,780	0.4919902%	0	0	0	0
55	55	PM (MANGGAGAWA)	140,000	0.4858134%	0	0	0	0
56	56	ABA	137,842	0.4783249%	0	0	0	0
57	57	ATS	136,710	0.4743968%	0	0	0	0
58	58	KAAGAPAY	130,270	0.4520494%	0	0	0	0
59	59	BANAT	126,462	0.4388352%	0	0	0	0
60	60	1-ABAA	120,734	0.4189585%	0	0	0	0
61	61	1GANAP/GUARDIANS	120,727	0.4189342%	0	0	0	0
62	62	BABAE KA	117,299	0.4070388%	0	0	0	0
63	63	BANDILA	115,428	0.4005462%	0	0	0	0
64	64	AHON	115,197	0.3997446%	0	0	0	0
65	65	ADD	115,058	0.3992623%	0	0	0	0
66	66	KATRIBU	114,891	0.3986828%	0	0	0	0
67	67	ANG LADLAD	113,187	0.3927697%	0	0	0	0
68	68	CONSLA	110,759	0.3843443%	0	0	0	0
69	69	KABAYAN	109,739	0.3808048%	0	0	0	0
70	70	1-AHAPO	109,682	0.3806070%	0	0	0	0
71	71	BINHI	108,005	0.3747877%	0	0	0	0

72	72	1-AANI	107,970	0.3746662%	0	0	0	0
73	73	AKAP BATA	107,154	0.3718346%	0	0	0	0
74		ANG TRABAHANTE	107,135	0.0000000%	0	0	0	0
75	74	AGILA	105,009	0.3643913%	0	0	0	0
76	75	FIL-MUS	103,670	0.3597448%	0	0	0	0
77	76	ABAKADA	97,183	0.3372343%	0	0	0	0
78	77	FIRM 24-K	96,255	0.3340141%	0	0	0	0
79	78	BUKID	94,503	0.3279345%	0	0	0	0
80	79	ABA ILONGGO	93,779	0.3254221%	0	0	0	0
81		AKAP	93,622	0.0000000%	0	0	0	0
82	80	AMANA	90,589	0.3143525%	0	0	0	0
83	81	AKO	90,117	0.3127146%	0	0	0	0
84	82	PCL	88,324	0.3064927%	0	0	0	0
85	83	ABROAD	88,242	0.3062082%	0	0	0	0
86		ANG TSINOY	88,212	0.0000000%	0	0	0	0
87	84	COCOFED	88,101	0.3057189%	0	0	0	0
88	85	COFA	86,182	0.2990598%	0	0	0	0
89	86	WOMENPOWER	86,128	0.2988724%	0	0	0	0
90	87	1ST KABAGIS	84,452	0.2930565%	0	0	0	0
91	88	ALYANSA NG OFW	82,655	0.2868208%	0	0	0	0
92	89	LYPAD	82,017	0.2846068%	0	0	0	0
93	90	KATUTUBO	79,943	0.2774099%	0	0	0	0
94	91	A TAMBAY	78,792	0.2734158%	0	0	0	0
95	92	BANTAY	76,581	0.2657434%	0	0	0	0
96	93	A-IPRA	75,508	0.2620200%	0	0	0	0
97	94	ALIM	74,235	0.2576026%	0	0	0	0
98	95	1-TUBIG	73,983	0.2567281%	0	0	0	0
99	96	AME	71,300	0.2474178%	0	0	0	0
100	97	APO	70,508	0.2446695%	0	0	0	0
101	98	BIYAHENG PINOY	70,296	0.2439338%	0	0	0	0
102	99	BAYANI	69,886	0.2425111%	0	0	0	0
103	100	ALMA	69,850	0.2423862%	0	0	0	0
104	101	VENDORS PARTY LIST	68,586	0.2380000%	0	0	0	0
105	102	ORAGON	67,188	0.2331488%	0	0	0	0
106	103	CHINOY	66,708	0.2314831%	0	0	0	0
107	104	APOI	66,443	0.2305636%	0	0	0	0
108	105	PEP	65,189	0.2262121%	0	0	0	0
109		UNLAD PILIPINAS	64,533	0.0000000%	0	0	0	0
110	106	ADAM	62,499	0.2168775%	0	0	0	0
111	107	AMA	61,899	0.2147955%	0	0	0	0
112	108	A BLESSED PARTY-LIST	61,822	0.2145283%	0	0	0	0

113	109	SB	60,563	0.2101594%	0	0	0	0
114	110	ARC	57,338	0.1989683%	0	0	0	0
115	111	AANI	56,742	0.1969002%	0	0	0	0
116	112	ABP-BICOLNON	54,873	0.1904146%	0	0	0	0
117		EMMANUEL	54,736	0.0000000%	0	0	0	0
118	113	AKO BAHAY	53,437	0.1854315%	0	0	0	0
119	114	ADD-TRIBAL	52,901	0.1835715%	0	0	0	0
120	115	KLBP	50,125	0.1739385%	0	0	0	0
121	116	AMANG	49,881	0.1730918%	0	0	0	0
122	117	ALON	49,813	0.1728559%	0	0	0	0
123	118	AAMA	49,521	0.1718426%	0	0	0	0
124	119	AGRI	49,190	0.1706940%	0	0	0	0
125	120	ANAKALUSUGAN	47,446	0.1646422%	0	0	0	0
126	121	BIDA	45,583	0.1581774%	0	0	0	0
127	122	KALAHI	45,399	0.1575389%	0	0	0	0
128	123	GREEN FORCE	43,625	0.1513829%	0	0	0	0
129	124	ASAHAN MO	41,170	0.1428638%	0	0	0	0
130	125	ARAL	41,018	0.1423364%	0	0	0	0
131	126	AKO AGILA	39,331	0.1364823%	0	0	0	0
132		AWAT	37,938	0.0000000%	0	0	0	0
133		AKAP.TAO	36,666	0.0000000%	0	0	0	0
134		ANG MINERO	36,621	0.0000000%	0	0	0	0
135	127	YES WE CAN	36,537	0.1267869%	0	0	0	0
136		ABBA-AMA	34,784	0.0000000%	0	0	0	0
137	128	PM (MASDA)	34,711	0.1204505%	0	0	0	0
138	129	OPO	34,307	0.1190486%	0	0	0	0
139	130	BAGO	32,863	0.1140378%	0	0	0	0
140	131	ABANG LINGKOD	32,009	0.1110743%	0	0	0	0
141	132	KASAPI	31,529	0.1094086%	0	0	0	0
142	133	ALMANA	31,460	0.1091692%	0	0	0	0
143		SAGIP	31,455	0.0000000%	0	0	0	0
144	134	ANUPA	31,170	0.1081629%	0	0	0	0
145	135	1-AK	30,486	0.1057893%	0	0	0	0
146	136	UNI-MAD	30,460	0.1056991%	0	0	0	0
147		FFW	30,386	0.0000000%	0	0	0	0
148	137	SABOD	29,874	0.1036656%	0	0	0	0
149	138	SMART	28,447	0.0987138%	0	0	0	0
150	139	ADA	26,953	0.0935295%	0	0	0	0
151	140	1ST PRISA	26,925	0.0934323%	0	0	0	0
152		AKSI	26,691	0.0000000%	0	0	0	0
153		APELA	25,950	0.0000000%	0	0	0	0

154	141	ABANTE KA	25,601	0.0888379%	0	0	0	0
155	142	BANGON TRANSPORT	25,468	0.0883764%	0	0	0	0
156	143	IVAP	24,429	0.0847710%	0	0	0	0
157		AK	23,279	0.0000000%	0	0	0	0
158		ABO	23,257	0.0000000%	0	0	0	0
159		ANG PADER	22,136	0.0000000%	0	0	0	0
160		ACTS	21,337	0.0000000%	0	0	0	0
161	144	AAPS	20,629	0.0715846%	0	0	0	0
162	145	ARCAPP	19,502	0.0676738%	0	0	0	0
163		AKI	19,480	0.0000000%	0	0	0	0
164		ALUM	19,394	0.0000000%	0	0	0	0
165		UCAP	19,172	0.0000000%	0	0	0	0
166	146	BIGKIS	18,969	0.0658242%	0	0	0	0
167		DAMAYAN	18,954	0.0000000%	0	0	0	0
168		AS	18,086	0.0000000%	0	0	0	0
169	147	AMS	17,480	0.0606573%	0	0	0	0
170	148	ABAY PARAK	16,962	0.0588598%	0	0	0	0
171	149	AFPSEGCO	15,514	0.0538351%	0	0	0	0
172		ALNA	15,300	0.0000000%	0	0	0	0
173		NCCP	12,341	0.0000000%	0	0	0	0
174	150	BUKLOD FILIPINA	12,334	0.0428002%	0	0	0	0
175		1-NET	12,203	0.0000000%	0	0	0	0
176	151	ANG PDR	11,671	0.0404995%	0	0	0	0
177	152	ABOT TANAW	10,310	0.0357767%	0	0	0	0
178		ACMA	8,679	0.0000000%	0	0	0	0
179		AASCA	7,056	0.0000000%	0	0	0	0
180	153	ALLUMAD	6,530	0.0226597%	0	0	0	0
181		UFS	5,975	0.0000000%	0	0	0	0
182		BIDA,inc	4,945	0.0000000%	0	0	0	0
183	154	CPM	4,458	0.0154697%	0	0	0	0
184		ANG SAMAKA	4,138	0.0000000%	0	0	0	0
185		AVPAP	4,126	0.0000000%	0	0	0	0
186		PFP	3,805	0.0000000%	0	0	0	0
187	155	ANG NICP	1,193	0.0041398%	0	0	0	0
					12	45	57	

4. **COOP-NATCCO PARTY-LIST** proposes to break up the second round of the CARPIO formula into the second round and the third round and to apply the **GREATEST REMAINDER RULE** in the allocation of seats in the third round. Its second round is the computation of the product of the

percentage of votes garnered by each party with respect to the total number of party list votes and the number of seats remaining after the first round. See Table 3 below.

Note that the total party-list votes of all qualified parties is **28,817,649** where the votes of **32** parties are excluded by the COOP-NATCCO Petition and is not **28,783,342** as shown in the petition of COOP-NATCCO. There is a difference of **34,307** which is the number of votes of **OPO party-list** (new Rank 129, old Rank 138) that COOP-NATCCO did not include in its table. Although, it listed 155 party-list groups in the said table, but it did not list Rank 134.

Table 3. Coop Natcco Formula on Canvass Report Number 8 Where the Votes of 155 PL Groups Were Considered and the Total Party List Votes of all Qualified Parties is 28,817,649

Rank	New Rank	Party-List	Votes Garnered	Percentage	1st Rd	Percentage x Remaining Seats	2nd Rd	Remainder	Rank of Remainder	3rd Rd	Seats Allocated
1	1	AKB	1,522,986	5.2849072%	1	2.3782082	2			0	3
2	2	SENIOR CITIZENS	1,292,182	4.4839952%	1	2.0177978	2			0	3
3	3	BUHAY	1,249,555	4.3360754%	1	1.9512339	1	0.9512339	2	1	3
4	4	AKBAYAN	1,058,691	3.6737591%	1	1.6531916	1	0.6531916	7	1	3
5	5	GABRIELA	1,001,421	3.4750267%	1	1.5637620	1	0.5637620	12	1	3
6	6	COOP-NATCCO	943,529	3.2741359%	1	1.4733612	1	0.4733612	16	1	3
7	7	1-CARE	768,829	2.6679102%	1	1.2005596	1	0.2005596		0	2
8	8	ABONO	766,615	2.6602274%	1	1.1971023	1	0.1971023		0	2
9	9	BAYAN MUNA	746,019	2.5887573%	1	1.1649408	1	0.1649408		0	2
10	10	AN WARAY	711,631	2.4694277%	1	1.1112425	1	0.1112425		0	2
11	11	CIBAC	647,483	2.2468280%	1	1.0110726	1	0.0110726		0	2
12	12	A TEACHER	614,725	2.1331546%	1	0.9599196	0	0.9599196	1	1	2
13	13	AGAP	515,501	1.7888378%	0	0.8049770	0	0.8049770	3	1	1
14	14	BUTIL	506,703	1.7583079%	0	0.7912386	0	0.7912386	4	1	1
15	15	ABC	469,093	1.6277976%	0	0.7325089	0	0.7325089	5	1	1
16	16	ANAKPAWIS	445,628	1.5463718%	0	0.6958673	0	0.6958673	6	1	1
17	17	KABATAAN	417,923	1.4502328%	0	0.6526048	0	0.6526048	8	1	1
18	18	LPGMA	417,600	1.4491120%	0	0.6521004	0	0.6521004	9	1	1
19	19	ABAMIN	376,011	1.3047942%	0	0.5871574	0	0.5871574	10	1	1
20	20	ACT TEACHERS	369,564	1.2824224%	0	0.5770901	0	0.5770901	11	1	1
21	21	AAMBIS-OWA	357,009	1.2388554%	0	0.5574849	0	0.5574849	13	1	1
22	22	YACAP	335,635	1.1646856%	0	0.5241085	0	0.5241085	14	1	1
23	23	APEC	313,359	1.0873857%	0	0.4893236	0	0.4893236	15	1	1
24	24	ANG KASANGGA	296,368	1.0284253%	0	0.4627914	0	0.4627914	17	1	1
25	25	BH	292,875	1.0163043%	0	0.4573369	0	0.4573369	18	1	1
26	26	ANAD	292,057	1.0134657%	0	0.4560596	0	0.4560596	19	1	1
27	27	AG	269,009	0.9334870%	0	0.4200691	0	0.4200691	20	1	1

28	28	AGBIAG	262,298	0.9101992%	0	0.4095896	0	0.4095896	21	1	1
29	29	PBA	258,498	0.8970128%	0	0.4036558	0	0.4036558	22	1	1
30	30	ABS	257,301	0.8928591%	0	0.4017866	0	0.4017866	23	1	1
31	31	TUCP	244,623	0.8488652%	0	0.3819893	0	0.3819893	24	1	1
32	32	AGHAM	241,898	0.8394092%	0	0.3777341	0	0.3777341	25	1	1
33	33	DIWA	238,675	0.8282251%	0	0.3727013	0	0.3727013	26	1	1
34	34	KAKUSA	234,717	0.8144905%	0	0.3665207	0	0.3665207	27	1	1
35	35	KALINGA	229,198	0.7953390%	0	0.3579025	0	0.3579025	28	1	1
36	36	ALAGAD	227,116	0.7881143%	0	0.3546514	0	0.3546514	29	1	1
37	37	1-UTAK	220,002	0.7634280%	0	0.3435426	0	0.3435426	30	1	1
38	38	1 ANG PAMILYA	217,032	0.7531218%	0	0.3389048	0	0.3389048	31	1	1
39	39	AVE	214,760	0.7452378%	0	0.3353570	0	0.3353570	32	1	1
40	40	AT	176,074	0.6109936%	0	0.2749471	0	0.2749471		0	0
41	41	ATING KOOP	173,711	0.6027938%	0	0.2712572	0	0.2712572		0	0
42	42	ALIF	170,304	0.5909712%	0	0.2659370	0	0.2659370		0	0
43	43	ALE	167,654	0.5817754%	0	0.2617989	0	0.2617989		0	0
44	44	AA-KASOSYO	166,432	0.5775350%	0	0.2598907	0	0.2598907		0	0
45	45	ALAY BUHAY	163,164	0.5661947%	0	0.2547876	0	0.2547876		0	0
46	46	AKMA-PTM	161,674	0.5610243%	0	0.2524609	0	0.2524609		0	0
47	47	KAABAY	160,745	0.5578005%	0	0.2510102	0	0.2510102		0	0
48	48	AMIN	157,733	0.5473486%	0	0.2463069	0	0.2463069		0	0
49	49	VFP	154,183	0.5350298%	0	0.2407634	0	0.2407634		0	0
50	50	ARARO	147,204	0.5108120%	0	0.2298654	0	0.2298654		0	0
51	51	ATONG PAGLAUM	145,435	0.5046734%	0	0.2271030	0	0.2271030		0	0
52	52	PACYAW	143,151	0.4967477%	0	0.2235365	0	0.2235365		0	0
53	53	ATM	142,013	0.4927987%	0	0.2217594	0	0.2217594		0	0
54	54	ANAK	141,780	0.4919902%	0	0.2213956	0	0.2213956		0	0
55	55	PM (MANGGAGAWA)	140,000	0.4858134%	0	0.2186160	0	0.2186160		0	0
56	56	ABA	137,842	0.4783249%	0	0.2152462	0	0.2152462		0	0
57	57	ATS	136,710	0.4743968%	0	0.2134786	0	0.2134786		0	0
58	58	KAAGAPAY	130,270	0.4520494%	0	0.2034222	0	0.2034222		0	0
59	59	BANAT	126,462	0.4388352%	0	0.1974759	0	0.1974759		0	0
60	60	1-ABAA	120,734	0.4189585%	0	0.1885313	0	0.1885313		0	0
61	61	1GANAP/GUARDIANS	120,727	0.4189342%	0	0.1885204	0	0.1885204		0	0
62	62	BABAE KA	117,299	0.4070388%	0	0.1831674	0	0.1831674		0	0
63	63	BANDILA	115,428	0.4005462%	0	0.1802458	0	0.1802458		0	0
64	64	AHON	115,197	0.3997446%	0	0.1798851	0	0.1798851		0	0
65	65	ADD	115,058	0.3992623%	0	0.1796680	0	0.1796680		0	0
66	66	KATRIBU	114,891	0.3986828%	0	0.1794072	0	0.1794072		0	0
67	67	ANG LADLAD	113,187	0.3927697%	0	0.1767464	0	0.1767464		0	0
68	68	CONSLA	110,759	0.3843443%	0	0.1729549	0	0.1729549		0	0

69	69	KABAYAN	109,739	0.3808048%	0	0.1713622	0	0.1713622	0	0
70	70	1-AHAPO	109,682	0.3806070%	0	0.1712732	0	0.1712732	0	0
71	71	BINHI	108,005	0.3747877%	0	0.1686545	0	0.1686545	0	0
72	72	1-AANI	107,970	0.3746662%	0	0.1685998	0	0.1685998	0	0
73	73	AKAP BATA	107,154	0.3718346%	0	0.1673256	0	0.1673256	0	0
74		ANG TRABAHANTE	107,135	0.0000000%	0	0.0000000	0	0.0000000	0	0
75	74	AGILA	105,009	0.3643913%	0	0.1639761	0	0.1639761	0	0
76	75	FIL-MUS	103,670	0.3597448%	0	0.1618852	0	0.1618852	0	0
77	76	ABAKADA	97,183	0.3372343%	0	0.1517554	0	0.1517554	0	0
78	77	FIRM 24-K	96,255	0.3340141%	0	0.1503063	0	0.1503063	0	0
79	78	BUKID	94,503	0.3279345%	0	0.1475705	0	0.1475705	0	0
80	79	ABA ILONGGO	93,779	0.3254221%	0	0.1464399	0	0.1464399	0	0
81		AKAP	93,622	0.0000000%	0	0.0000000	0	0.0000000	0	0
82	80	AMANA	90,589	0.3143525%	0	0.1414586	0	0.1414586	0	0
83	81	AKO	90,117	0.3127146%	0	0.1407216	0	0.1407216	0	0
84	82	PCL	88,324	0.3064927%	0	0.1379217	0	0.1379217	0	0
85	83	ABROAD	88,242	0.3062082%	0	0.1377937	0	0.1377937	0	0
86		ANG TSINOY	88,212	0.0000000%	0	0.0000000	0	0.0000000	0	0
87	84	COCOFED	88,101	0.3057189%	0	0.1375735	0	0.1375735	0	0
88	85	COFA	86,182	0.2990598%	0	0.1345769	0	0.1345769	0	0
89	86	WOMENPOWER	86,128	0.2988724%	0	0.1344926	0	0.1344926	0	0
90	87	1ST KABAGIS	84,452	0.2930565%	0	0.1318754	0	0.1318754	0	0
91	88	ALYANSA NG OFW	82,655	0.2868208%	0	0.1290693	0	0.1290693	0	0
92	89	LYPAD	82,017	0.2846068%	0	0.1280731	0	0.1280731	0	0
93	90	KATUTUBO	79,943	0.2774099%	0	0.1248344	0	0.1248344	0	0
94	91	A TAMBAY	78,792	0.2734158%	0	0.1230371	0	0.1230371	0	0
95	92	BANTAY	76,581	0.2657434%	0	0.1195845	0	0.1195845	0	0
96	93	A-IPRA	75,508	0.2620200%	0	0.1179090	0	0.1179090	0	0
97	94	ALIM	74,235	0.2576026%	0	0.1159211	0	0.1159211	0	0
98	95	1-TUBIG	73,983	0.2567281%	0	0.1155276	0	0.1155276	0	0
99	96	AME	71,300	0.2474178%	0	0.1113380	0	0.1113380	0	0
100	97	APO	70,508	0.2446695%	0	0.1101013	0	0.1101013	0	0
101	98	BIYAHENG PINOY	70,296	0.2439338%	0	0.1097702	0	0.1097702	0	0
102	99	BAYANI	69,886	0.2425111%	0	0.1091300	0	0.1091300	0	0
103	100	ALMA	69,850	0.2423862%	0	0.1090738	0	0.1090738	0	0
104	101	VENDORS PARTY LIST	68,586	0.2380000%	0	0.1071000	0	0.1071000	0	0
105	102	ORAGON	67,188	0.2331488%	0	0.1049170	0	0.1049170	0	0
106	103	CHINOY	66,708	0.2314831%	0	0.1041674	0	0.1041674	0	0
107	104	APOI	66,443	0.2305636%	0	0.1037536	0	0.1037536	0	0
108	105	PEP	65,189	0.2262121%	0	0.1017954	0	0.1017954	0	0
109		UNLAD PILIPINAS	64,533	0.0000000%	0	0.0000000	0	0.0000000	0	0

110	106	ADAM	62,499	0.2168775%	0	0.0975949	0	0.0975949	0	0
111	107	AMA	61,899	0.2147955%	0	0.0966580	0	0.0966580	0	0
112	108	A BLESSED PARTY-LIST	61,822	0.2145283%	0	0.0965377	0	0.0965377	0	0
113	109	SB	60,563	0.2101594%	0	0.0945717	0	0.0945717	0	0
114	110	ARC	57,338	0.1989683%	0	0.0895358	0	0.0895358	0	0
115	111	AANI	56,742	0.1969002%	0	0.0886051	0	0.0886051	0	0
116	112	ABP-BICOLNON	54,873	0.1904146%	0	0.0856866	0	0.0856866	0	0
117		EMMANUEL	54,736	0.0000000%	0	0.0000000	0	0.0000000	0	0
118	113	AKO BAHAY	53,437	0.1854315%	0	0.0834442	0	0.0834442	0	0
119	114	ADD-TRIBAL	52,901	0.1835715%	0	0.0826072	0	0.0826072	0	0
120	115	KLBP	50,125	0.1739385%	0	0.0782723	0	0.0782723	0	0
121	116	AMANG	49,881	0.1730918%	0	0.0778913	0	0.0778913	0	0
122	117	ALON	49,813	0.1728559%	0	0.0777851	0	0.0777851	0	0
123	118	AAMA	49,521	0.1718426%	0	0.0773292	0	0.0773292	0	0
124	119	AGRI	49,190	0.1706940%	0	0.0768123	0	0.0768123	0	0
125	120	ANAKALUSUGAN	47,446	0.1646422%	0	0.0740890	0	0.0740890	0	0
126	121	BIDA	45,583	0.1581774%	0	0.0711798	0	0.0711798	0	0
127	122	KALAH	45,399	0.1575389%	0	0.0708925	0	0.0708925	0	0
128	123	GREEN FORCE	43,625	0.1513829%	0	0.0681223	0	0.0681223	0	0
129	124	ASAHAN MO	41,170	0.1428638%	0	0.0642887	0	0.0642887	0	0
130	125	ARAL	41,018	0.1423364%	0	0.0640514	0	0.0640514	0	0
131	126	AKO AGILA	39,331	0.1364823%	0	0.0614171	0	0.0614171	0	0
132		AWAT	37,938	0.0000000%	0	0.0000000	0	0.0000000	0	0
133		AKAP.TAO	36,666	0.0000000%	0	0.0000000	0	0.0000000	0	0
134		ANG MINERO	36,621	0.0000000%	0	0.0000000	0	0.0000000	0	0
135	127	YES WE CAN	36,537	0.1267869%	0	0.0570541	0	0.0570541	0	0
136		ABBA-AMA	34,784	0.0000000%	0	0.0000000	0	0.0000000	0	0
137	128	PM (MASDA)	34,711	0.1204505%	0	0.0542027	0	0.0542027	0	0
138	129	OPO	34,307	0.1190486%	0	0.0535719	0	0.0535719	0	0
139	130	BAGO	32,863	0.1140378%	0	0.0513170	0	0.0513170	0	0
140	131	ABANG LINGKOD	32,009	0.1110743%	0	0.0499834	0	0.0499834	0	0
141	132	KASAPI	31,529	0.1094086%	0	0.0492339	0	0.0492339	0	0
142	133	ALMANA	31,460	0.1091692%	0	0.0491261	0	0.0491261	0	0
143		SAGIP	31,455	0.0000000%	0	0.0000000	0	0.0000000	0	0
144	134	ANUPA	31,170	0.1081629%	0	0.0486733	0	0.0486733	0	0
145	135	1-AK	30,486	0.1057893%	0	0.0476052	0	0.0476052	0	0
146	136	UNI-MAD	30,460	0.1056991%	0	0.0475646	0	0.0475646	0	0
147		FFW	30,386	0.0000000%	0	0.0000000	0	0.0000000	0	0
148	137	SABOD	29,874	0.1036656%	0	0.0466495	0	0.0466495	0	0
149	138	SMART	28,447	0.0987138%	0	0.0444212	0	0.0444212	0	0
150	139	ADA	26,953	0.0935295%	0	0.0420883	0	0.0420883	0	0

151	140	1ST PRISA	26,925	0.0934323%	0	0.0420445	0	0.0420445		0	0
152		AKSI	26,691	0.0000000%	0	0.0000000	0	0.0000000		0	0
153		APELA	25,950	0.0000000%	0	0.0000000	0	0.0000000		0	0
154	141	ABANTE KA	25,601	0.0888379%	0	0.0399771	0	0.0399771		0	0
155	142	BANGON TRANSPORT	25,468	0.0883764%	0	0.0397694	0	0.0397694		0	0
156	143	IVAP	24,429	0.0847710%	0	0.0381469	0	0.0381469		0	0
157		AK	23,279	0.0000000%	0	0.0000000	0	0.0000000		0	0
158		ABO	23,257	0.0000000%	0	0.0000000	0	0.0000000		0	0
159		ANG PADER	22,136	0.0000000%	0	0.0000000	0	0.0000000		0	0
160		ACTS	21,337	0.0000000%	0	0.0000000	0	0.0000000		0	0
161	144	AAPS	20,629	0.0715846%	0	0.0322131	0	0.0322131		0	0
162	145	ARCAPP	19,502	0.0676738%	0	0.0304532	0	0.0304532		0	0
163		AKI	19,480	0.0000000%	0	0.0000000	0	0.0000000		0	0
164		ALUM	19,394	0.0000000%	0	0.0000000	0	0.0000000		0	0
165		UCAP	19,172	0.0000000%	0	0.0000000	0	0.0000000		0	0
166	146	BIGKIS	18,969	0.0658242%	0	0.0296209	0	0.0296209		0	0
167		DAMAYAN	18,954	0.0000000%	0	0.0000000	0	0.0000000		0	0
168		AS	18,086	0.0000000%	0	0.0000000	0	0.0000000		0	0
169	147	AMS	17,480	0.0606573%	0	0.0272958	0	0.0272958		0	0
170	148	ABAY PARAK	16,962	0.0588598%	0	0.0264869	0	0.0264869		0	0
171	149	AFPSEGCO	15,514	0.0538351%	0	0.0242258	0	0.0242258		0	0
172		ALNA	15,300	0.0000000%	0	0.0000000	0	0.0000000		0	0
173		NCCP	12,341	0.0000000%	0	0.0000000	0	0.0000000		0	0
174	150	BUKLOD FILIPINA	12,334	0.0428002%	0	0.0192601	0	0.0192601		0	0
175		1-NET	12,203	0.0000000%	0	0.0000000	0	0.0000000		0	0
176	151	ANG PDR	11,671	0.0404995%	0	0.0182248	0	0.0182248		0	0
177	152	ABOT TANAW	10,310	0.0357767%	0	0.0160995	0	0.0160995		0	0
178		ACMA	8,679	0.0000000%	0	0.0000000	0	0.0000000		0	0
179		AASCA	7,056	0.0000000%	0	0.0000000	0	0.0000000		0	0
180	153	ALLUMAD	6,530	0.0226597%	0	0.0101969	0	0.0101969		0	0
181		UFS	5,975	0.0000000%	0	0.0000000	0	0.0000000		0	0
182		BIDA,inc	4,945	0.0000000%	0	0.0000000	0	0.0000000		0	0
183	154	CPM	4,458	0.0154697%	0	0.0069614	0	0.0069614		0	0
184		ANG SAMAKA	4,138	0.0000000%	0	0.0000000	0	0.0000000		0	0
185		AVPAP	4,126	0.0000000%	0	0.0000000	0	0.0000000		0	0
186		PFP	3,805	0.0000000%	0	0.0000000	0	0.0000000		0	0
187	155	ANG NICP	1,193	0.0041398%	0	0.0018629	0	0.0018629		0	0
					12		13			32	57

COOP-NATCCO Party-list claims that the application of the **greatest remainder rule** as against the **next-in-rank rule** in the **Carpio Formula** is an accurate measure to determine a party's right of representation (**#19, page 4, COOP-NATCCO Petition**).

5. We shall show in this paper that the **COOP-NATCCO formulation** is **not** an accurate measure in determining a party's right of representation based on **proportional representation**.
6. The **Party-List System Act (R.A. 7941)** declares that **"The State shall promote proportional representation** in the election of representatives to the House of Representatives through a party-list system of registered national, regional and sectoral parties or organizations or coalitions thereof, which will enable Filipino citizens belonging to the marginalized and underrepresented sectors, organizations and parties, and who lack well-defined political constituencies but who could contribute to the formulation and enactment of appropriate legislation that will benefit the nation as a whole, to become members of the House of Representatives..." (**Sec. 2. Declaration of Policy**)

R.A. 7941 also asserts that **"The party-list system is a mechanism of proportional representation** in the election of representatives to the House of Representatives from national, regional and sectoral parties or organizations or coalitions thereof registered with the Commission on Elections (COMELEC). Component parties or organizations of a coalition may participate independently provided the coalition of which they form part does not participate in the party-list system." (**Sec 3, Definition of Terms (a)**)

Hence, the **accuracy of a seat allocation method** that is applied to a party-list voting system **must be measured** in terms of its adherence to the principle of **proportional representation**.

7. By **proportional representation**, we mean that the **number of seats allocated to a party is proportional to the number of votes it garnered**. Furthermore, proportional representation occurs if a party's percent share of the total available seats is equal to its percent share of the total votes of all the parties qualified to receive a seat.

Thus, a party is allocated **5%** of the total seats if it garnered **5%** of the total votes of all the parties qualified to receive a seat. Hence, if this is true for all the parties in the list then the allocation of seats is **one-hundred-percent proportional**. The seat allocation method that achieves this situation fully adheres to the principle of proportional representation.

However, a **hundred-percent proportional representation** is an ideal situation since the seats cannot be broken into smaller pieces. A seat must be considered in its entirety. Hence, **the accuracy of an allocation method is determined by the difference between the percent share of seats and the percent share of votes**.

Therefore, *the allocation method is accurate if the difference is as small as possible. Otherwise, if the difference is as big as one seat, then the method is not accurate and contradicts the principle of proportional representation.*

For example, **Gabriela party-list** in **Canvass Report No. 8** of the **2010 party-list** election has obtained **1,001,421 votes**. Assuming that the **155 party-list** groups as shown in the **COOP-NATCCO** petitions are qualified to receive a seat, then the total qualified party-list votes is **28,817,649**. This means that the percent share of votes of **Gabriela** is **1,001,421/28,817,649 x 100% or 3.4750267%**. By the **CARPIO FORMULA** it will be awarded with **2 seats**. Since the total number of available party-list seats is **57**, the percent share of seats of **Gabriela** will be **2/57 x 100% or 3.5087719%**. The difference between the percent of seats using the **CARPIO FORMULA** and the percent share of votes of **Gabriela** will be **0.0337452%**. This equivalent to **0.0337452% x 57 = 0.0192348** of a seat. Its positive value which is equal to **0.0192348** is the *seat allocation error* of the **CARPIO FORMULA** on **Gabriela** in **Canvass Report No. 8**. Since this is a very small number, we conclude that the **CARPIO FORMULA** on **Gabriela** in **Canvass Report No. 8** is **accurate**.

If we apply the **COOP-NATCCO FORMULA** to **Gabriela** in **Canvass Report No. 8**, **Gabriela** will receive **3 seats**, and its percent share of the total seats will be **3/57 x 100% or 5.2631579%**. The difference between **Gabriela's** percent share of seats using the **COOP-NATCCO FORMULA** and its percent share of votes will be **1.7881312%** and this percentage is equivalent to **1.7881312% x 57 or 1.0192348** of a seat. Thus the *seat allocation error* of the **COOP-NATCCO FORMULA** on **GABRIELA** in **Canvass Report No. 8** is **greater than one seat**. Hence, the **COOP-NATCCO FORMULA** is **not accurate** and **contradicts the principle of proportional representation**. See **Rank 5** as well as **Rank 6** of **Table 4**.

For the comparison of the *seat allocation errors* of the **CARPIO FORMULA** and the **COOP-NATCCO FORMULA** see **Table 4** also.

Table 4. Comparison of the CARPIO FORMULA and the COOP-NATCCO FORMULA as applied to Canvass Report No. 8 with votes of 32 parties excluded by the COOP-NATCCO Petition						
RANK	PARTY	% Share Votes	PERCENT SHARE OF SEATS		SEAT ALLOCATION ERROR 57 x % share of seats - %share of votes	
			CARPIO	COOP-NATCCO	CARPIO	COOP-NATCCO
1	AKB	5.2849072%	5.2631579%	5.2631579%	0.0123971	0.0123971
2	SENIOR CITIZENS	4.4839952%	5.2631579%	5.2631579%	0.4441227	0.4441227
3	BUHAY	4.3360754%	3.5087719%	5.2631579%	0.4715630	0.5284370
4	AKBAYAN	3.6737591%	3.5087719%	5.2631579%	0.0940427	0.9059573
5	GABRIELA	3.4750267%	3.5087719%	5.2631579%	0.0192348	1.0192348
6	COOP-NATCCO	3.2741359%	3.5087719%	5.2631579%	0.1337425	1.1337425

7	1-CARE	2.6679102%	3.5087719%	3.5087719%	0.4792912	0.4792912
8	ABONO	2.6602274%	3.5087719%	3.5087719%	0.4836704	0.4836704
9	BAYAN MUNA	2.5887573%	3.5087719%	3.5087719%	0.5244083	0.5244083
10	AN WARAY	2.4694277%	3.5087719%	3.5087719%	0.5924262	0.5924262
11	CIBAC	2.2468280%	3.5087719%	3.5087719%	0.7193081	0.7193081
12	A TEACHER	2.1331546%	3.5087719%	3.5087719%	0.7841019	0.7841019
13	AGAP	1.7888378%	1.7543860%	1.7543860%	0.0196375	0.0196375
14	BUTIL	1.7583079%	1.7543860%	1.7543860%	0.0022355	0.0022355
15	ABC	1.6277976%	1.7543860%	1.7543860%	0.0721554	0.0721554
16	ANAKPAWIS	1.5463718%	1.7543860%	1.7543860%	0.1185681	0.1185681
17	KABATAAN	1.4502328%	1.7543860%	1.7543860%	0.1733673	0.1733673
18	LPGMA	1.4491120%	1.7543860%	1.7543860%	0.1740062	0.1740062
19	ABAMIN	1.3047942%	1.7543860%	1.7543860%	0.2562673	0.2562673
20	ACT TEACHERS	1.2824224%	1.7543860%	1.7543860%	0.2690192	0.2690192
21	AAMBIS-OWA	1.2388554%	1.7543860%	1.7543860%	0.2938524	0.2938524
22	YACAP	1.1646856%	1.7543860%	1.7543860%	0.3361292	0.3361292
23	APEC	1.0873857%	1.7543860%	1.7543860%	0.3801901	0.3801901
24	ANG KASANGGA	1.0284253%	1.7543860%	1.7543860%	0.4137976	0.4137976
25	BH	1.0163043%	1.7543860%	1.7543860%	0.4207066	0.4207066
26	ANAD	1.0134657%	1.7543860%	1.7543860%	0.4223245	0.4223245
27	AG	0.9334870%	1.7543860%	1.7543860%	0.4679124	0.4679124
28	AGBIAG	0.9101992%	1.7543860%	1.7543860%	0.4811865	0.4811865
29	PBA	0.8970128%	1.7543860%	1.7543860%	0.4887027	0.4887027
30	ABS	0.8928591%	1.7543860%	1.7543860%	0.4910703	0.4910703
31	TUCP	0.8488652%	1.7543860%	1.7543860%	0.5161468	0.5161468
32	AGHAM	0.8394092%	1.7543860%	1.7543860%	0.5215367	0.5215367
33	DIWA	0.8282251%	1.7543860%	1.7543860%	0.5279117	0.5279117
34	KAKUSA	0.8144905%	1.7543860%	1.7543860%	0.5357404	0.5357404
35	KALINGA	0.7953390%	1.7543860%	1.7543860%	0.5466568	0.5466568
36	ALAGAD	0.7881143%	1.7543860%	1.7543860%	0.5507749	0.5507749
37	1-UTAK	0.7634280%	1.7543860%	1.7543860%	0.5648460	0.5648460
38	1 ANG PAMILYA	0.7531218%	1.7543860%	1.7543860%	0.5707206	0.5707206
39	AVE	0.7452378%	1.7543860%	1.7543860%	0.5752145	0.5752145
40	AT	0.6109936%	1.7543860%	0.0000000%	0.6517336	0.3482664
41	ATING KOOP	0.6027938%	1.7543860%	0.0000000%	0.6564075	0.3435925
42	ALIF	0.5909712%	1.7543860%	0.0000000%	0.6631464	0.3368536
43	ALE	0.5817754%	1.7543860%	0.0000000%	0.6683880	0.3316120
44	AA-KASOSYO	0.5775350%	0.0000000%	0.0000000%	0.3291949	0.3291949
45	ALAY BUHAY	0.5661947%	0.0000000%	0.0000000%	0.3227310	0.3227310
46	AKMA-PTM	0.5610243%	0.0000000%	0.0000000%	0.3197838	0.3197838
47	KAQBAY	0.5578005%	0.0000000%	0.0000000%	0.3179463	0.3179463

48	AMIN	0.5473486%	0.0000000%	0.0000000%	0.3119887	0.3119887
49	VFP	0.5350298%	0.0000000%	0.0000000%	0.3049670	0.3049670
50	ARARO	0.5108120%	0.0000000%	0.0000000%	0.2911628	0.2911628
51	ATONG PAGLAUM	0.5046734%	0.0000000%	0.0000000%	0.2876638	0.2876638
52	PACYAW	0.4967477%	0.0000000%	0.0000000%	0.2831462	0.2831462
53	ATM	0.4927987%	0.0000000%	0.0000000%	0.2808953	0.2808953
54	ANAK	0.4919902%	0.0000000%	0.0000000%	0.2804344	0.2804344
55	PM (MANGGAGAWA)	0.4858134%	0.0000000%	0.0000000%	0.2769136	0.2769136
56	ABA	0.4783249%	0.0000000%	0.0000000%	0.2726452	0.2726452
57	ATS	0.4743968%	0.0000000%	0.0000000%	0.2704062	0.2704062
58	KAAGAPAY	0.4520494%	0.0000000%	0.0000000%	0.2576681	0.2576681
59	BANAT	0.4388352%	0.0000000%	0.0000000%	0.2501361	0.2501361
60	1-ABAA	0.4189585%	0.0000000%	0.0000000%	0.2388064	0.2388064
61	1GANAP/GUARDIANS	0.4189342%	0.0000000%	0.0000000%	0.2387925	0.2387925
62	BABAE KA	0.4070388%	0.0000000%	0.0000000%	0.2320121	0.2320121
63	BANDILA	0.4005462%	0.0000000%	0.0000000%	0.2283113	0.2283113
64	AHON	0.3997446%	0.0000000%	0.0000000%	0.2278544	0.2278544
65	ADD	0.3992623%	0.0000000%	0.0000000%	0.2275795	0.2275795
66	KATRIBU	0.3986828%	0.0000000%	0.0000000%	0.2272492	0.2272492
67	ANG LADLAD	0.3927697%	0.0000000%	0.0000000%	0.2238787	0.2238787
68	CONSLA	0.3843443%	0.0000000%	0.0000000%	0.2190763	0.2190763
69	KABAYAN	0.3808048%	0.0000000%	0.0000000%	0.2170588	0.2170588
70	1-AHAPO	0.3806070%	0.0000000%	0.0000000%	0.2169460	0.2169460
71	BINHI	0.3747877%	0.0000000%	0.0000000%	0.2136290	0.2136290
72	1-AANI	0.3746662%	0.0000000%	0.0000000%	0.2135598	0.2135598
73	AKAP BATA	0.3718346%	0.0000000%	0.0000000%	0.2119457	0.2119457
74	AGILA	0.3643913%	0.0000000%	0.0000000%	0.2077030	0.2077030
75	FIL-MUS	0.3597448%	0.0000000%	0.0000000%	0.2050545	0.2050545
76	ABAKADA	0.3372343%	0.0000000%	0.0000000%	0.1922236	0.1922236
77	FIRM 24-K	0.3340141%	0.0000000%	0.0000000%	0.1903880	0.1903880
78	BUKID	0.3279345%	0.0000000%	0.0000000%	0.1869226	0.1869226
79	ABA ILONGGO	0.3254221%	0.0000000%	0.0000000%	0.1854906	0.1854906
80	AMANA	0.3143525%	0.0000000%	0.0000000%	0.1791809	0.1791809
81	AKO	0.3127146%	0.0000000%	0.0000000%	0.1782473	0.1782473
82	PCL	0.3064927%	0.0000000%	0.0000000%	0.1747009	0.1747009
83	ABROAD	0.3062082%	0.0000000%	0.0000000%	0.1745387	0.1745387
84	COCOFED	0.3057189%	0.0000000%	0.0000000%	0.1742598	0.1742598
85	COFA	0.2990598%	0.0000000%	0.0000000%	0.1704641	0.1704641
86	WOMENPOWER	0.2988724%	0.0000000%	0.0000000%	0.1703573	0.1703573
87	1ST KABAGIS	0.2930565%	0.0000000%	0.0000000%	0.1670422	0.1670422
88	ALYANSA NG OFW	0.2868208%	0.0000000%	0.0000000%	0.1634878	0.1634878

89	<i>LYPAD</i>	0.2846068%	0.0000000%	0.0000000%	0.1622259	0.1622259
90	<i>KATUTUBO</i>	0.2774099%	0.0000000%	0.0000000%	0.1581236	0.1581236
91	<i>A TAMBAY</i>	0.2734158%	0.0000000%	0.0000000%	0.1558470	0.1558470
92	<i>BANTAY</i>	0.2657434%	0.0000000%	0.0000000%	0.1514737	0.1514737
93	<i>A-IPRA</i>	0.2620200%	0.0000000%	0.0000000%	0.1493514	0.1493514
94	<i>ALIM</i>	0.2576026%	0.0000000%	0.0000000%	0.1468335	0.1468335
95	<i>1-TUBIG</i>	0.2567281%	0.0000000%	0.0000000%	0.1463350	0.1463350
96	<i>AME</i>	0.2474178%	0.0000000%	0.0000000%	0.1410282	0.1410282
97	<i>APO</i>	0.2446695%	0.0000000%	0.0000000%	0.1394616	0.1394616
98	<i>BIYAHENG PINOY</i>	0.2439338%	0.0000000%	0.0000000%	0.1390423	0.1390423
99	<i>BAYANI</i>	0.2425111%	0.0000000%	0.0000000%	0.1382313	0.1382313
100	<i>ALMA</i>	0.2423862%	0.0000000%	0.0000000%	0.1381601	0.1381601
101	<i>VENDORS PARTY LIST</i>	0.2380000%	0.0000000%	0.0000000%	0.1356600	0.1356600
102	<i>ORAGON</i>	0.2331488%	0.0000000%	0.0000000%	0.1328948	0.1328948
103	<i>CHINOY</i>	0.2314831%	0.0000000%	0.0000000%	0.1319454	0.1319454
104	<i>APOI</i>	0.2305636%	0.0000000%	0.0000000%	0.1314212	0.1314212
105	<i>PEP</i>	0.2262121%	0.0000000%	0.0000000%	0.1289409	0.1289409
106	<i>ADAM</i>	0.2168775%	0.0000000%	0.0000000%	0.1236202	0.1236202
107	<i>AMA</i>	0.2147955%	0.0000000%	0.0000000%	0.1224334	0.1224334
108	<i>A BLESSED PARTY-LIST</i>	0.2145283%	0.0000000%	0.0000000%	0.1222811	0.1222811
109	<i>SB</i>	0.2101594%	0.0000000%	0.0000000%	0.1197909	0.1197909
110	<i>ARC</i>	0.1989683%	0.0000000%	0.0000000%	0.1134120	0.1134120
111	<i>AANI</i>	0.1969002%	0.0000000%	0.0000000%	0.1122331	0.1122331
112	<i>ABP-BICOLNON</i>	0.1904146%	0.0000000%	0.0000000%	0.1085363	0.1085363
113	<i>AKO BAHAY</i>	0.1854315%	0.0000000%	0.0000000%	0.1056960	0.1056960
114	<i>ADD-TRIBAL</i>	0.1835715%	0.0000000%	0.0000000%	0.1046358	0.1046358
115	<i>KLBP</i>	0.1739385%	0.0000000%	0.0000000%	0.0991450	0.0991450
116	<i>AMANG</i>	0.1730918%	0.0000000%	0.0000000%	0.0986624	0.0986624
117	<i>ALON</i>	0.1728559%	0.0000000%	0.0000000%	0.0985279	0.0985279
118	<i>AAMA</i>	0.1718426%	0.0000000%	0.0000000%	0.0979503	0.0979503
119	<i>AGRI</i>	0.1706940%	0.0000000%	0.0000000%	0.0972956	0.0972956
120	<i>ANAKALUSUGAN</i>	0.1646422%	0.0000000%	0.0000000%	0.0938460	0.0938460
121	<i>BIDA</i>	0.1581774%	0.0000000%	0.0000000%	0.0901611	0.0901611
122	<i>KALAH</i>	0.1575389%	0.0000000%	0.0000000%	0.0897972	0.0897972
123	<i>GREEN FORCE</i>	0.1513829%	0.0000000%	0.0000000%	0.0862883	0.0862883
124	<i>ASAHAN MO</i>	0.1428638%	0.0000000%	0.0000000%	0.0814324	0.0814324
125	<i>ARAL</i>	0.1423364%	0.0000000%	0.0000000%	0.0811317	0.0811317
126	<i>AKO AGILA</i>	0.1364823%	0.0000000%	0.0000000%	0.0777949	0.0777949
127	<i>YES WE CAN</i>	0.1267869%	0.0000000%	0.0000000%	0.0722685	0.0722685
128	<i>PM (MASDA)</i>	0.1204505%	0.0000000%	0.0000000%	0.0686568	0.0686568
129	<i>OPO</i>	0.1190486%	0.0000000%	0.0000000%	0.0678577	0.0678577

130	BAGO	0.1140378%	0.0000000%	0.0000000%	0.0650015	0.0650015
131	ABANG LINGKOD	0.1110743%	0.0000000%	0.0000000%	0.0633123	0.0633123
132	KASAPI	0.1094086%	0.0000000%	0.0000000%	0.0623629	0.0623629
133	ALMANA	0.1091692%	0.0000000%	0.0000000%	0.0622265	0.0622265
134	ANUPA	0.1081629%	0.0000000%	0.0000000%	0.0616528	0.0616528
135	1-AK	0.1057893%	0.0000000%	0.0000000%	0.0602999	0.0602999
136	UNI-MAD	0.1056991%	0.0000000%	0.0000000%	0.0602485	0.0602485
137	SABOD	0.1036656%	0.0000000%	0.0000000%	0.0590894	0.0590894
138	SMART	0.0987138%	0.0000000%	0.0000000%	0.0562669	0.0562669
139	ADA	0.0935295%	0.0000000%	0.0000000%	0.0533118	0.0533118
140	1ST PRISA	0.0934323%	0.0000000%	0.0000000%	0.0532564	0.0532564
141	ABANTE KA	0.0888379%	0.0000000%	0.0000000%	0.0506376	0.0506376
142	BANGON TRANSPORT	0.0883764%	0.0000000%	0.0000000%	0.0503745	0.0503745
143	IVAP	0.0847710%	0.0000000%	0.0000000%	0.0483195	0.0483195
144	AAPS	0.0715846%	0.0000000%	0.0000000%	0.0408032	0.0408032
145	ARCAPP	0.0676738%	0.0000000%	0.0000000%	0.0385741	0.0385741
146	BIGKIS	0.0658242%	0.0000000%	0.0000000%	0.0375198	0.0375198
147	AMS	0.0606573%	0.0000000%	0.0000000%	0.0345746	0.0345746
148	ABAY PARAK	0.0588598%	0.0000000%	0.0000000%	0.0335501	0.0335501
149	AFPSEGCO	0.0538351%	0.0000000%	0.0000000%	0.0306860	0.0306860
150	BUKLOD FILIPINA	0.0428002%	0.0000000%	0.0000000%	0.0243961	0.0243961
151	ANG PDR	0.0404995%	0.0000000%	0.0000000%	0.0230847	0.0230847
152	ABOT TANAW	0.0357767%	0.0000000%	0.0000000%	0.0203927	0.0203927
153	ALLUMAD	0.0226597%	0.0000000%	0.0000000%	0.0129160	0.0129160
154	CPM	0.0154697%	0.0000000%	0.0000000%	0.0088177	0.0088177
155	ANG NICP	0.0041398%	0.0000000%	0.0000000%	0.0023597	0.0023597
Total Seat Allocation Errors =					33.9775719	35.5670093
					CARPIO	COOP-NATCCO

Also, if two seat allocation methods follows the principle of proportional representation (that is, all of their seat allocation errors are less than one), then the *first allocation method is more accurate than the second method if the sum of all the seat allocation errors is nearer to zero as compared to the corresponding sum of the other method.*

Even if the **COOP-NATCCO FORMULA** does not contradict the principle of proportional representation, the **CARPIO FORMULA** is more accurate than that of the **COOP-NATCCO FORMULA**, since the sum of the seat allocation errors of the **CARPIO FORMULA** is less than that of the **COOP-NATCCO FORMULA** (see last row of Table 4).

8. If **COOP-NATCCO** wants to formulate a more accurate method than that of the **CARPIO FORMULA**, it should first make some minor changes in the second round of its allocation method before applying the **Greatest-Remainder Rule** in the third round. Instead of multiplying the percentage share of votes of a party to the difference of the total number of available seats and the number of seats allocated in the first round, **COOP-NATCCO** should multiply the percentage share of votes of a party to the total number of available seats, then subtract the number of seat allocated to the given party in the first round. The number of seats that will be allocated in the second round is equivalent to the **whole value** of the product. The **remainder** for the third round is obtained by subtracting the number of seats allocated in the second round from the corresponding product.

If we apply this new method to **Canvass Report No.8** with the votes of the 32 party-list groups excluded by the **COOP-NATCCO** petition, we have **44** winning party-list groups. See **Table 5**.

Table 5. The New Method as applied to Canvass Report No. 8 with votes of 32 parties excluded by the COOP-NATCCO Petition									
RANK	PARTY	% Share of Votes	1st Rd	% share of Votes x 57 - 1st rd seat	2nd Rd	Remainder	Rank of Remainder	3rd Rd	Seats Allocated
1	AKB	5.2849072%	1	2.0123971	2	0.0123971		0	3
2	SENIOR CITIZENS	4.4839952%	1	1.5558773	1	0.5558773	15	1	3
3	BUHAY	4.3360754%	1	1.4715630	1	0.4715630	26	1	3
4	AKBAYAN	3.6737591%	1	1.0940427	1	0.0940427		0	2
5	GABRIELA	3.4750267%	1	0.9807652	0	0.9807652	1	1	2
6	COOP-NATCCO	3.2741359%	1	0.8662575	0	0.8662575	4	1	2
7	1-CARE	2.6679102%	1	0.5207088	0	0.5207088	17	1	2
8	ABONO	2.6602274%	1	0.5163296	0	0.5163296	19	1	2
9	BAYAN MUNA	2.5887573%	1	0.4755917	0	0.4755917	24	1	2
10	AN WARAY	2.4694277%	1	0.4075738	0	0.4075738	33	1	2
11	CIBAC	2.2468280%	1	0.2806919	0	0.2806919		0	1
12	A TEACHER	2.1331546%	1	0.2158981	0	0.2158981		0	1
13	AGAP	1.7888378%	0	1.0196375	1	0.0196375		0	1
14	BUTIL	1.7583079%	0	1.0022355	1	0.0022355		0	1
15	ABC	1.6277976%	0	0.9278446	0	0.9278446	2	1	1
16	ANAKPAWIS	1.5463718%	0	0.8814319	0	0.8814319	3	1	1
17	KABATAAN	1.4502328%	0	0.8266327	0	0.8266327	5	1	1
18	LPGMA	1.4491120%	0	0.8259938	0	0.8259938	6	1	1
19	ABAMIN	1.3047942%	0	0.7437327	0	0.7437327	7	1	1
20	ACT TEACHERS	1.2824224%	0	0.7309808	0	0.7309808	8	1	1
21	AAMBIS-OWA	1.2388554%	0	0.7061476	0	0.7061476	9	1	1
22	YACAP	1.1646856%	0	0.6638708	0	0.6638708	10	1	1
23	APEC	1.0873857%	0	0.6198099	0	0.6198099	11	1	1
24	ANG KASANGGA	1.0284253%	0	0.5862024	0	0.5862024	12	1	1

25	BH	1.0163043%	0	0.5792934	0	0.5792934	13	1	1
26	ANAD	1.0134657%	0	0.5776755	0	0.5776755	14	1	1
27	AG	0.9334870%	0	0.5320876	0	0.5320876	16	1	1
28	AGBIAG	0.9101992%	0	0.5188135	0	0.5188135	18	1	1
29	PBA	0.8970128%	0	0.5112973	0	0.5112973	20	1	1
30	ABS	0.8928591%	0	0.5089297	0	0.5089297	21	1	1
31	TUCP	0.8488652%	0	0.4838532	0	0.4838532	22	1	1
32	AGHAM	0.8394092%	0	0.4784633	0	0.4784633	23	1	1
33	DIWA	0.8282251%	0	0.4720883	0	0.4720883	25	1	1
34	KAKUSA	0.8144905%	0	0.4642596	0	0.4642596	27	1	1
35	KALINGA	0.7953390%	0	0.4533432	0	0.4533432	28	1	1
36	ALAGAD	0.7881143%	0	0.4492251	0	0.4492251	29	1	1
37	1-UTAK	0.7634280%	0	0.4351540	0	0.4351540	30	1	1
38	1 ANG PAMILYA	0.7531218%	0	0.4292794	0	0.4292794	31	1	1
39	AVE	0.7452378%	0	0.4247855	0	0.4247855	32	1	1
40	AT	0.6109936%	0	0.3482664	0	0.3482664	34	1	1
41	ATING KOOP	0.6027938%	0	0.3435925	0	0.3435925	35	1	1
42	ALIF	0.5909712%	0	0.3368536	0	0.3368536	36	1	1
43	ALE	0.5817754%	0	0.3316120	0	0.3316120	37	1	1
44	AA-KASOSYO	0.5775350%	0	0.3291949	0	0.3291949	38	1	1
45	ALAY BUHAY	0.5661947%	0	0.3227310	0	0.3227310		0	0
46	AKMA-PTM	0.5610243%	0	0.3197838	0	0.3197838		0	0
47	KAAKBAY	0.5578005%	0	0.3179463	0	0.3179463		0	0
48	AMIN	0.5473486%	0	0.3119887	0	0.3119887		0	0
49	VFP	0.5350298%	0	0.3049670	0	0.3049670		0	0
50	ARARO	0.5108120%	0	0.2911628	0	0.2911628		0	0
51	ATONG PAGLAUM	0.5046734%	0	0.2876638	0	0.2876638		0	0
52	PACYAW	0.4967477%	0	0.2831462	0	0.2831462		0	0
53	ATM	0.4927987%	0	0.2808953	0	0.2808953		0	0
54	ANAK	0.4919902%	0	0.2804344	0	0.2804344		0	0
55	PM (MANGGAGAWA)	0.4858134%	0	0.2769136	0	0.2769136		0	0
56	ABA	0.4783249%	0	0.2726452	0	0.2726452		0	0
57	ATS	0.4743968%	0	0.2704062	0	0.2704062		0	0
58	KAAGAPAY	0.4520494%	0	0.2576681	0	0.2576681		0	0
59	BANAT	0.4388352%	0	0.2501361	0	0.2501361		0	0
60	1-ABAA	0.4189585%	0	0.2388064	0	0.2388064		0	0
61	1GANAP/GUARDIANS	0.4189342%	0	0.2387925	0	0.2387925		0	0
62	BABAE KA	0.4070388%	0	0.2320121	0	0.2320121		0	0
63	BANDILA	0.4005462%	0	0.2283113	0	0.2283113		0	0
64	AHON	0.3997446%	0	0.2278544	0	0.2278544		0	0
65	ADD	0.3992623%	0	0.2275795	0	0.2275795		0	0

66	KATRIBU	0.3986828%	0	0.2272492	0	0.2272492		0	0
67	ANG LADLAD	0.3927697%	0	0.2238787	0	0.2238787		0	0
68	CONSLA	0.3843443%	0	0.2190763	0	0.2190763		0	0
69	KABAYAN	0.3808048%	0	0.2170588	0	0.2170588		0	0
70	1-AHAPO	0.3806070%	0	0.2169460	0	0.2169460		0	0
71	BINHI	0.3747877%	0	0.2136290	0	0.2136290		0	0
72	1-AANI	0.3746662%	0	0.2135598	0	0.2135598		0	0
73	AKAP BATA	0.3718346%	0	0.2119457	0	0.2119457		0	0
74	AGILA	0.3643913%	0	0.2077030	0	0.2077030		0	0
75	FIL-MUS	0.3597448%	0	0.2050545	0	0.2050545		0	0
76	ABAKADA	0.3372343%	0	0.1922236	0	0.1922236		0	0
77	FIRM 24-K	0.3340141%	0	0.1903880	0	0.1903880		0	0
78	BUKID	0.3279345%	0	0.1869226	0	0.1869226		0	0
79	ABA ILONGGO	0.3254221%	0	0.1854906	0	0.1854906		0	0
80	AMANA	0.3143525%	0	0.1791809	0	0.1791809		0	0
81	AKO	0.3127146%	0	0.1782473	0	0.1782473		0	0
82	PCL	0.3064927%	0	0.1747009	0	0.1747009		0	0
83	ABROAD	0.3062082%	0	0.1745387	0	0.1745387		0	0
84	COCOFED	0.3057189%	0	0.1742598	0	0.1742598		0	0
85	COFA	0.2990598%	0	0.1704641	0	0.1704641		0	0
86	WOMENPOWER	0.2988724%	0	0.1703573	0	0.1703573		0	0
87	1ST KABAGIS	0.2930565%	0	0.1670422	0	0.1670422		0	0
88	ALYANSA NG OFW	0.2868208%	0	0.1634878	0	0.1634878		0	0
89	LYPAD	0.2846068%	0	0.1622259	0	0.1622259		0	0
90	KATUTUBO	0.2774099%	0	0.1581236	0	0.1581236		0	0
91	A TAMBAY	0.2734158%	0	0.1558470	0	0.1558470		0	0
92	BANTAY	0.2657434%	0	0.1514737	0	0.1514737		0	0
93	A-IPRA	0.2620200%	0	0.1493514	0	0.1493514		0	0
94	ALIM	0.2576026%	0	0.1468335	0	0.1468335		0	0
95	1-TUBIG	0.2567281%	0	0.1463350	0	0.1463350		0	0
96	AME	0.2474178%	0	0.1410282	0	0.1410282		0	0
97	APO	0.2446695%	0	0.1394616	0	0.1394616		0	0
98	BIYAHENG PINOY	0.2439338%	0	0.1390423	0	0.1390423		0	0
99	BAYANI	0.2425111%	0	0.1382313	0	0.1382313		0	0
100	ALMA	0.2423862%	0	0.1381601	0	0.1381601		0	0
101	VENDORS PARTY LIST	0.2380000%	0	0.1356600	0	0.1356600		0	0
102	ORAGON	0.2331488%	0	0.1328948	0	0.1328948		0	0
103	CHINOY	0.2314831%	0	0.1319454	0	0.1319454		0	0
104	APOI	0.2305636%	0	0.1314212	0	0.1314212		0	0
105	PEP	0.2262121%	0	0.1289409	0	0.1289409		0	0
106	ADAM	0.2168775%	0	0.1236202	0	0.1236202		0	0

107	AMA	0.2147955%	0	0.1224334	0	0.1224334		0	0
108	A BLESSED PARTY-LIST	0.2145283%	0	0.1222811	0	0.1222811		0	0
109	SB	0.2101594%	0	0.1197909	0	0.1197909		0	0
110	ARC	0.1989683%	0	0.1134120	0	0.1134120		0	0
111	AANI	0.1969002%	0	0.1122331	0	0.1122331		0	0
112	ABP-BICOLNON	0.1904146%	0	0.1085363	0	0.1085363		0	0
113	AKO BAHAY	0.1854315%	0	0.1056960	0	0.1056960		0	0
114	ADD-TRIBAL	0.1835715%	0	0.1046358	0	0.1046358		0	0
115	KLBP	0.1739385%	0	0.0991450	0	0.0991450		0	0
116	AMANG	0.1730918%	0	0.0986624	0	0.0986624		0	0
117	ALON	0.1728559%	0	0.0985279	0	0.0985279		0	0
118	AAMA	0.1718426%	0	0.0979503	0	0.0979503		0	0
119	AGRI	0.1706940%	0	0.0972956	0	0.0972956		0	0
120	ANAKALUSUGAN	0.1646422%	0	0.0938460	0	0.0938460		0	0
121	BIDA	0.1581774%	0	0.0901611	0	0.0901611		0	0
122	KALAH	0.1575389%	0	0.0897972	0	0.0897972		0	0
123	GREEN FORCE	0.1513829%	0	0.0862883	0	0.0862883		0	0
124	ASAHAN MO	0.1428638%	0	0.0814324	0	0.0814324		0	0
125	ARAL	0.1423364%	0	0.0811317	0	0.0811317		0	0
126	AKO AGILA	0.1364823%	0	0.0777949	0	0.0777949		0	0
127	YES WE CAN	0.1267869%	0	0.0722685	0	0.0722685		0	0
128	PM (MASDA)	0.1204505%	0	0.0686568	0	0.0686568		0	0
129	OPO	0.1190486%	0	0.0678577	0	0.0678577		0	0
130	BAGO	0.1140378%	0	0.0650015	0	0.0650015		0	0
131	ABANG LINGKOD	0.1110743%	0	0.0633123	0	0.0633123		0	0
132	KASAPI	0.1094086%	0	0.0623629	0	0.0623629		0	0
133	ALMANA	0.1091692%	0	0.0622265	0	0.0622265		0	0
134	ANUPA	0.1081629%	0	0.0616528	0	0.0616528		0	0
135	1-AK	0.1057893%	0	0.0602999	0	0.0602999		0	0
136	UNI-MAD	0.1056991%	0	0.0602485	0	0.0602485		0	0
137	SABOD	0.1036656%	0	0.0590894	0	0.0590894		0	0
138	SMART	0.0987138%	0	0.0562669	0	0.0562669		0	0
139	ADA	0.0935295%	0	0.0533118	0	0.0533118		0	0
140	1ST PRISA	0.0934323%	0	0.0532564	0	0.0532564		0	0
141	ABANTE KA	0.0888379%	0	0.0506376	0	0.0506376		0	0
142	BANGON TRANSPORT	0.0883764%	0	0.0503745	0	0.0503745		0	0
143	IVAP	0.0847710%	0	0.0483195	0	0.0483195		0	0
144	AAPS	0.0715846%	0	0.0408032	0	0.0408032		0	0
145	ARCAPP	0.0676738%	0	0.0385741	0	0.0385741		0	0
146	BIGKIS	0.0658242%	0	0.0375198	0	0.0375198		0	0
147	AMS	0.0606573%	0	0.0345746	0	0.0345746		0	0

148	ABAY PARAK	0.0588598%	0	0.0335501	0	0.0335501		0	0
149	AFPSECO	0.0538351%	0	0.0306860	0	0.0306860		0	0
150	BUKLOD FILIPINA	0.0428002%	0	0.0243961	0	0.0243961		0	0
151	ANG PDR	0.0404995%	0	0.0230847	0	0.0230847		0	0
152	ABOT TANAW	0.0357767%	0	0.0203927	0	0.0203927		0	0
153	ALLUMAD	0.0226597%	0	0.0129160	0	0.0129160		0	0
154	CPM	0.0154697%	0	0.0088177	0	0.0088177		0	0
155	ANG NICP	0.0041398%	0	0.0023597	0	0.0023597		0	0
			12		7			38	57

This new method is consistent with the principle of proportional representation since the seat allocation errors of each party is less than one seat. This new method is more accurate than the **CARPIO FORMULA** since the total seat allocation errors is less than that of the **CARPIO FORMULA**. See **Table 6** below.

Table 6. A New Seat Allocation Method that is More Accurate than the CARPIO FORMULA

RANK	PARTY	% Share Votes	PERCENT SHARE OF SEATS		PERCENT DIFFERENCE		SEAT ALLOCATION ERROR	
			CARPIO	New Method	CARPIO	New Method	CARPIO	New Method
1	AKB	5.2849072%	5.2631579%	5.2631579%	-0.0217493%	-0.0217493%	0.0123971	0.0123971
2	SENIOR CITIZENS	4.4839952%	5.2631579%	5.2631579%	0.7791627%	0.7791627%	0.4441227	0.4441227
3	BUHAY	4.3360754%	3.5087719%	5.2631579%	-0.8273035%	0.9270825%	0.4715630	0.5284370
4	AKBAYAN	3.6737591%	3.5087719%	3.5087719%	-0.1649872%	-0.1649872%	0.0940427	0.0940427
5	GABRIELA	3.4750267%	3.5087719%	3.5087719%	0.0337452%	0.0337452%	0.0192348	0.0192348
6	COOP-NATCCO	3.2741359%	3.5087719%	3.5087719%	0.2346360%	0.2346360%	0.1337425	0.1337425
7	1-CARE	2.6679102%	3.5087719%	3.5087719%	0.8408617%	0.8408617%	0.4792912	0.4792912
8	ABONO	2.6602274%	3.5087719%	3.5087719%	0.8485445%	0.8485445%	0.4836704	0.4836704
9	BAYAN MUNA	2.5887573%	3.5087719%	3.5087719%	0.9200146%	0.9200146%	0.5244083	0.5244083
10	AN WARAY	2.4694277%	3.5087719%	3.5087719%	1.0393443%	1.0393443%	0.5924262	0.5924262
11	CIBAC	2.2468280%	3.5087719%	1.7543860%	1.2619440%	-0.4924420%	0.7193081	0.2806919
12	A TEACHER	2.1331546%	3.5087719%	1.7543860%	1.3756173%	-0.3787686%	0.7841019	0.2158981
13	AGAP	1.7888378%	1.7543860%	1.7543860%	-0.0344518%	-0.0344518%	0.0196375	0.0196375
14	BUTIL	1.7583079%	1.7543860%	1.7543860%	-0.0039219%	-0.0039219%	0.0022355	0.0022355
15	ABC	1.6277976%	1.7543860%	1.7543860%	0.1265884%	0.1265884%	0.0721554	0.0721554
16	ANAKPAWIS	1.5463718%	1.7543860%	1.7543860%	0.2080142%	0.2080142%	0.1185681	0.1185681
17	KABATAAN	1.4502328%	1.7543860%	1.7543860%	0.3041532%	0.3041532%	0.1733673	0.1733673
18	LPGMA	1.4491120%	1.7543860%	1.7543860%	0.3052740%	0.3052740%	0.1740062	0.1740062
19	ABAMIN	1.3047942%	1.7543860%	1.7543860%	0.4495918%	0.4495918%	0.2562673	0.2562673
20	ACT TEACHERS	1.2824224%	1.7543860%	1.7543860%	0.4719635%	0.4719635%	0.2690192	0.2690192
21	AAMBIS-OWA	1.2388554%	1.7543860%	1.7543860%	0.5155306%	0.5155306%	0.2938524	0.2938524
22	YACAP	1.1646856%	1.7543860%	1.7543860%	0.5897004%	0.5897004%	0.3361292	0.3361292
23	APEC	1.0873857%	1.7543860%	1.7543860%	0.6670002%	0.6670002%	0.3801901	0.3801901

24	ANG KASANGGA	1.0284253%	1.7543860%	1.7543860%	0.7259606%	0.7259606%	0.4137976	0.4137976
25	BH	1.0163043%	1.7543860%	1.7543860%	0.7380817%	0.7380817%	0.4207066	0.4207066
26	ANAD	1.0134657%	1.7543860%	1.7543860%	0.7409202%	0.7409202%	0.4223245	0.4223245
27	AG	0.9334870%	1.7543860%	1.7543860%	0.8208990%	0.8208990%	0.4679124	0.4679124
28	AGBIAG	0.9101992%	1.7543860%	1.7543860%	0.8441868%	0.8441868%	0.4811865	0.4811865
29	PBA	0.8970128%	1.7543860%	1.7543860%	0.8573732%	0.8573732%	0.4887027	0.4887027
30	ABS	0.8928591%	1.7543860%	1.7543860%	0.8615269%	0.8615269%	0.4910703	0.4910703
31	TUCP	0.8488652%	1.7543860%	1.7543860%	0.9055207%	0.9055207%	0.5161468	0.5161468
32	AGHAM	0.8394092%	1.7543860%	1.7543860%	0.9149768%	0.9149768%	0.5215367	0.5215367
33	DIWA	0.8282251%	1.7543860%	1.7543860%	0.9261609%	0.9261609%	0.5279117	0.5279117
34	KAKUSA	0.8144905%	1.7543860%	1.7543860%	0.9398955%	0.9398955%	0.5357404	0.5357404
35	KALINGA	0.7953390%	1.7543860%	1.7543860%	0.9590470%	0.9590470%	0.5466568	0.5466568
36	ALAGAD	0.7881143%	1.7543860%	1.7543860%	0.9662717%	0.9662717%	0.5507749	0.5507749
37	1-UTAK	0.7634280%	1.7543860%	1.7543860%	0.9909580%	0.9909580%	0.5648460	0.5648460
38	1 ANG PAMILYA	0.7531218%	1.7543860%	1.7543860%	1.0012642%	1.0012642%	0.5707206	0.5707206
39	AVE	0.7452378%	1.7543860%	1.7543860%	1.0091482%	1.0091482%	0.5752145	0.5752145
40	AT	0.6109936%	1.7543860%	1.7543860%	1.1433923%	1.1433923%	0.6517336	0.6517336
41	ATING KOOP	0.6027938%	1.7543860%	1.7543860%	1.1515922%	1.1515922%	0.6564075	0.6564075
42	ALIF	0.5909712%	1.7543860%	1.7543860%	1.1634148%	1.1634148%	0.6631464	0.6631464
43	ALE	0.5817754%	1.7543860%	1.7543860%	1.1726105%	1.1726105%	0.6683880	0.6683880
44	AA-KASOSYO	0.5775350%	0.0000000%	1.7543860%	-0.5775350%	1.1768510%	0.3291949	0.6708051
45	ALAY BUHAY	0.5661947%	0.0000000%	0.0000000%	-0.5661947%	-0.5661947%	0.3227310	0.3227310
46	AKMA-PTM	0.5610243%	0.0000000%	0.0000000%	-0.5610243%	-0.5610243%	0.3197838	0.3197838
47	KAABAY	0.5578005%	0.0000000%	0.0000000%	-0.5578005%	-0.5578005%	0.3179463	0.3179463
48	AMIN	0.5473486%	0.0000000%	0.0000000%	-0.5473486%	-0.5473486%	0.3119887	0.3119887
49	VFP	0.5350298%	0.0000000%	0.0000000%	-0.5350298%	-0.5350298%	0.3049670	0.3049670
50	ARARO	0.5108120%	0.0000000%	0.0000000%	-0.5108120%	-0.5108120%	0.2911628	0.2911628
51	ATONG PAGLAUM	0.5046734%	0.0000000%	0.0000000%	-0.5046734%	-0.5046734%	0.2876638	0.2876638
52	PACYAW	0.4967477%	0.0000000%	0.0000000%	-0.4967477%	-0.4967477%	0.2831462	0.2831462
53	ATM	0.4927987%	0.0000000%	0.0000000%	-0.4927987%	-0.4927987%	0.2808953	0.2808953
54	ANAK	0.4919902%	0.0000000%	0.0000000%	-0.4919902%	-0.4919902%	0.2804344	0.2804344
55	PM (MANGGAGAWA)	0.4858134%	0.0000000%	0.0000000%	-0.4858134%	-0.4858134%	0.2769136	0.2769136
56	ABA	0.4783249%	0.0000000%	0.0000000%	-0.4783249%	-0.4783249%	0.2726452	0.2726452
57	ATS	0.4743968%	0.0000000%	0.0000000%	-0.4743968%	-0.4743968%	0.2704062	0.2704062
58	KAAGAPAY	0.4520494%	0.0000000%	0.0000000%	-0.4520494%	-0.4520494%	0.2576681	0.2576681
59	BANAT	0.4388352%	0.0000000%	0.0000000%	-0.4388352%	-0.4388352%	0.2501361	0.2501361
60	1-ABAA	0.4189585%	0.0000000%	0.0000000%	-0.4189585%	-0.4189585%	0.2388064	0.2388064
61	1GANAP/GUARDIANS	0.4189342%	0.0000000%	0.0000000%	-0.4189342%	-0.4189342%	0.2387925	0.2387925
62	BABAE KA	0.4070388%	0.0000000%	0.0000000%	-0.4070388%	-0.4070388%	0.2320121	0.2320121
63	BANDILA	0.4005462%	0.0000000%	0.0000000%	-0.4005462%	-0.4005462%	0.2283113	0.2283113
64	AHON	0.3997446%	0.0000000%	0.0000000%	-0.3997446%	-0.3997446%	0.2278544	0.2278544

65	<i>ADD</i>	0.3992623%	0.0000000%	0.0000000%	-0.3992623%	-0.3992623%	0.2275795	0.2275795
66	<i>KATRIBU</i>	0.3986828%	0.0000000%	0.0000000%	-0.3986828%	-0.3986828%	0.2272492	0.2272492
67	<i>ANG LADLAD</i>	0.3927697%	0.0000000%	0.0000000%	-0.3927697%	-0.3927697%	0.2238787	0.2238787
68	<i>CONSLA</i>	0.3843443%	0.0000000%	0.0000000%	-0.3843443%	-0.3843443%	0.2190763	0.2190763
69	<i>KABAYAN</i>	0.3808048%	0.0000000%	0.0000000%	-0.3808048%	-0.3808048%	0.2170588	0.2170588
70	<i>1-AHAPO</i>	0.3806070%	0.0000000%	0.0000000%	-0.3806070%	-0.3806070%	0.2169460	0.2169460
71	<i>BINHI</i>	0.3747877%	0.0000000%	0.0000000%	-0.3747877%	-0.3747877%	0.2136290	0.2136290
72	<i>1-AANI</i>	0.3746662%	0.0000000%	0.0000000%	-0.3746662%	-0.3746662%	0.2135598	0.2135598
73	<i>AKAP BATA</i>	0.3718346%	0.0000000%	0.0000000%	-0.3718346%	-0.3718346%	0.2119457	0.2119457
74	<i>AGILA</i>	0.3643913%	0.0000000%	0.0000000%	-0.3643913%	-0.3643913%	0.2077030	0.2077030
75	<i>FIL-MUS</i>	0.3597448%	0.0000000%	0.0000000%	-0.3597448%	-0.3597448%	0.2050545	0.2050545
76	<i>ABAKADA</i>	0.3372343%	0.0000000%	0.0000000%	-0.3372343%	-0.3372343%	0.1922236	0.1922236
77	<i>FIRM 24-K</i>	0.3340141%	0.0000000%	0.0000000%	-0.3340141%	-0.3340141%	0.1903880	0.1903880
78	<i>BUKID</i>	0.3279345%	0.0000000%	0.0000000%	-0.3279345%	-0.3279345%	0.1869226	0.1869226
79	<i>ABA ILONGGO</i>	0.3254221%	0.0000000%	0.0000000%	-0.3254221%	-0.3254221%	0.1854906	0.1854906
80	<i>AMANA</i>	0.3143525%	0.0000000%	0.0000000%	-0.3143525%	-0.3143525%	0.1791809	0.1791809
81	<i>AKO</i>	0.3127146%	0.0000000%	0.0000000%	-0.3127146%	-0.3127146%	0.1782473	0.1782473
82	<i>PCL</i>	0.3064927%	0.0000000%	0.0000000%	-0.3064927%	-0.3064927%	0.1747009	0.1747009
83	<i>ABROAD</i>	0.3062082%	0.0000000%	0.0000000%	-0.3062082%	-0.3062082%	0.1745387	0.1745387
84	<i>COCOFED</i>	0.3057189%	0.0000000%	0.0000000%	-0.3057189%	-0.3057189%	0.1742598	0.1742598
85	<i>COFA</i>	0.2990598%	0.0000000%	0.0000000%	-0.2990598%	-0.2990598%	0.1704641	0.1704641
86	<i>WOMENPOWER</i>	0.2988724%	0.0000000%	0.0000000%	-0.2988724%	-0.2988724%	0.1703573	0.1703573
87	<i>1ST KABAGIS</i>	0.2930565%	0.0000000%	0.0000000%	-0.2930565%	-0.2930565%	0.1670422	0.1670422
88	<i>ALYANSA NG OFW</i>	0.2868208%	0.0000000%	0.0000000%	-0.2868208%	-0.2868208%	0.1634878	0.1634878
89	<i>LYPAD</i>	0.2846068%	0.0000000%	0.0000000%	-0.2846068%	-0.2846068%	0.1622259	0.1622259
90	<i>KATUTUBO</i>	0.2774099%	0.0000000%	0.0000000%	-0.2774099%	-0.2774099%	0.1581236	0.1581236
91	<i>A TAMBAY</i>	0.2734158%	0.0000000%	0.0000000%	-0.2734158%	-0.2734158%	0.1558470	0.1558470
92	<i>BANTAY</i>	0.2657434%	0.0000000%	0.0000000%	-0.2657434%	-0.2657434%	0.1514737	0.1514737
93	<i>A-IPRA</i>	0.2620200%	0.0000000%	0.0000000%	-0.2620200%	-0.2620200%	0.1493514	0.1493514
94	<i>ALIM</i>	0.2576026%	0.0000000%	0.0000000%	-0.2576026%	-0.2576026%	0.1468335	0.1468335
95	<i>1-TUBIG</i>	0.2567281%	0.0000000%	0.0000000%	-0.2567281%	-0.2567281%	0.1463350	0.1463350
96	<i>AME</i>	0.2474178%	0.0000000%	0.0000000%	-0.2474178%	-0.2474178%	0.1410282	0.1410282
97	<i>APO</i>	0.2446695%	0.0000000%	0.0000000%	-0.2446695%	-0.2446695%	0.1394616	0.1394616
98	<i>BIYAHENG PINOY</i>	0.2439338%	0.0000000%	0.0000000%	-0.2439338%	-0.2439338%	0.1390423	0.1390423
99	<i>BAYANI</i>	0.2425111%	0.0000000%	0.0000000%	-0.2425111%	-0.2425111%	0.1382313	0.1382313
100	<i>ALMA</i>	0.2423862%	0.0000000%	0.0000000%	-0.2423862%	-0.2423862%	0.1381601	0.1381601
101	<i>VENDORS PARTY LIST</i>	0.2380000%	0.0000000%	0.0000000%	-0.2380000%	-0.2380000%	0.1356600	0.1356600
102	<i>ORAGON</i>	0.2331488%	0.0000000%	0.0000000%	-0.2331488%	-0.2331488%	0.1328948	0.1328948
103	<i>CHINOY</i>	0.2314831%	0.0000000%	0.0000000%	-0.2314831%	-0.2314831%	0.1319454	0.1319454
104	<i>APOI</i>	0.2305636%	0.0000000%	0.0000000%	-0.2305636%	-0.2305636%	0.1314212	0.1314212
105	<i>PEP</i>	0.2262121%	0.0000000%	0.0000000%	-0.2262121%	-0.2262121%	0.1289409	0.1289409

106	ADAM	0.2168775%	0.0000000%	0.0000000%	-0.2168775%	-0.2168775%	0.1236202	0.1236202
107	AMA	0.2147955%	0.0000000%	0.0000000%	-0.2147955%	-0.2147955%	0.1224334	0.1224334
108	A BLESSED PARTY-LIST	0.2145283%	0.0000000%	0.0000000%	-0.2145283%	-0.2145283%	0.1222811	0.1222811
109	SB	0.2101594%	0.0000000%	0.0000000%	-0.2101594%	-0.2101594%	0.1197909	0.1197909
110	ARC	0.1989683%	0.0000000%	0.0000000%	-0.1989683%	-0.1989683%	0.1134120	0.1134120
111	AANI	0.1969002%	0.0000000%	0.0000000%	-0.1969002%	-0.1969002%	0.1122331	0.1122331
112	ABP-BICOLNON	0.1904146%	0.0000000%	0.0000000%	-0.1904146%	-0.1904146%	0.1085363	0.1085363
113	AKO BAHAY	0.1854315%	0.0000000%	0.0000000%	-0.1854315%	-0.1854315%	0.1056960	0.1056960
114	ADD-TRIBAL	0.1835715%	0.0000000%	0.0000000%	-0.1835715%	-0.1835715%	0.1046358	0.1046358
115	KLBP	0.1739385%	0.0000000%	0.0000000%	-0.1739385%	-0.1739385%	0.0991450	0.0991450
116	AMANG	0.1730918%	0.0000000%	0.0000000%	-0.1730918%	-0.1730918%	0.0986624	0.0000000
117	ALON	0.1728559%	0.0000000%	0.0000000%	-0.1728559%	-0.1728559%	0.0985279	0.0985279
118	AAMA	0.1718426%	0.0000000%	0.0000000%	-0.1718426%	-0.1718426%	0.0979503	0.0979503
119	AGRI	0.1706940%	0.0000000%	0.0000000%	-0.1706940%	-0.1706940%	0.0972956	0.0972956
120	ANAKALUSUGAN	0.1646422%	0.0000000%	0.0000000%	-0.1646422%	-0.1646422%	0.0938460	0.0938460
121	BIDA	0.1581774%	0.0000000%	0.0000000%	-0.1581774%	-0.1581774%	0.0901611	0.0901611
122	KALAHI	0.1575389%	0.0000000%	0.0000000%	-0.1575389%	-0.1575389%	0.0897972	0.0897972
123	GREEN FORCE	0.1513829%	0.0000000%	0.0000000%	-0.1513829%	-0.1513829%	0.0862883	0.0862883
124	ASAHAN MO	0.1428638%	0.0000000%	0.0000000%	-0.1428638%	-0.1428638%	0.0814324	0.0814324
125	ARAL	0.1423364%	0.0000000%	0.0000000%	-0.1423364%	-0.1423364%	0.0811317	0.0811317
126	AKO AGILA	0.1364823%	0.0000000%	0.0000000%	-0.1364823%	-0.1364823%	0.0777949	0.0777949
127	YES WE CAN	0.1267869%	0.0000000%	0.0000000%	-0.1267869%	-0.1267869%	0.0722685	0.0722685
128	PM (MASDA)	0.1204505%	0.0000000%	0.0000000%	-0.1204505%	-0.1204505%	0.0686568	0.0686568
129	OPO	0.1190486%	0.0000000%	0.0000000%	-0.1190486%	-0.1190486%	0.0678577	0.0678577
130	BAGO	0.1140378%	0.0000000%	0.0000000%	-0.1140378%	-0.1140378%	0.0650015	0.0650015
131	ABANG LINGKOD	0.1110743%	0.0000000%	0.0000000%	-0.1110743%	-0.1110743%	0.0633123	0.0633123
132	KASAPI	0.1094086%	0.0000000%	0.0000000%	-0.1094086%	-0.1094086%	0.0623629	0.0623629
133	ALMANA	0.1091692%	0.0000000%	0.0000000%	-0.1091692%	-0.1091692%	0.0622265	0.0622265
134	ANUPA	0.1081629%	0.0000000%	0.0000000%	-0.1081629%	-0.1081629%	0.0616528	0.0616528
135	1-AK	0.1057893%	0.0000000%	0.0000000%	-0.1057893%	-0.1057893%	0.0602999	0.0602999
136	UNI-MAD	0.1056991%	0.0000000%	0.0000000%	-0.1056991%	-0.1056991%	0.0602485	0.0602485
137	SABOD	0.1036656%	0.0000000%	0.0000000%	-0.1036656%	-0.1036656%	0.0590894	0.0590894
138	SMART	0.0987138%	0.0000000%	0.0000000%	-0.0987138%	-0.0987138%	0.0562669	0.0562669
139	ADA	0.0935295%	0.0000000%	0.0000000%	-0.0935295%	-0.0935295%	0.0533118	0.0533118
140	1ST PRISA	0.0934323%	0.0000000%	0.0000000%	-0.0934323%	-0.0934323%	0.0532564	0.0532564
141	ABANTE KA	0.0888379%	0.0000000%	0.0000000%	-0.0888379%	-0.0888379%	0.0506376	0.0506376
142	BANGON TRANSPORT	0.0883764%	0.0000000%	0.0000000%	-0.0883764%	-0.0883764%	0.0503745	0.0503745
143	IVAP	0.0847710%	0.0000000%	0.0000000%	-0.0847710%	-0.0847710%	0.0483195	0.0483195
144	AAPS	0.0715846%	0.0000000%	0.0000000%	-0.0715846%	-0.0715846%	0.0408032	0.0408032
145	ARCAPP	0.0676738%	0.0000000%	0.0000000%	-0.0676738%	-0.0676738%	0.0385741	0.0385741
146	BIGKIS	0.0658242%	0.0000000%	0.0000000%	-0.0658242%	-0.0658242%	0.0375198	0.0375198

147	<i>AMS</i>	0.0606573%	0.0000000%	0.0000000%	-0.0606573%	-0.0606573%	0.0345746	0.0345746
148	<i>ABAY PARAK</i>	0.0588598%	0.0000000%	0.0000000%	-0.0588598%	-0.0588598%	0.0335501	0.0335501
149	<i>AFPSEGCO</i>	0.0538351%	0.0000000%	0.0000000%	-0.0538351%	-0.0538351%	0.0306860	0.0306860
150	<i>BUKLOD FILIPINA</i>	0.0428002%	0.0000000%	0.0000000%	-0.0428002%	-0.0428002%	0.0243961	0.0243961
151	<i>ANG PDR</i>	0.0404995%	0.0000000%	0.0000000%	-0.0404995%	-0.0404995%	0.0230847	0.0230847
152	<i>ABOT TANAW</i>	0.0357767%	0.0000000%	0.0000000%	-0.0357767%	-0.0357767%	0.0203927	0.0203927
153	<i>ALLUMAD</i>	0.0226597%	0.0000000%	0.0000000%	-0.0226597%	-0.0226597%	0.0129160	0.0129160
154	<i>CPM</i>	0.0154697%	0.0000000%	0.0000000%	-0.0154697%	-0.0154697%	0.0088177	0.0088177
155	<i>ANG NICP</i>	0.0041398%	0.0000000%	0.0000000%	-0.0041398%	-0.0041398%	0.0023597	0.0023597
Total Seat Allocation Errors =							33.9775719	33.2705738
							CARPIO	NEW METHOD

References:

1. COOP-NATCCO PETITION, NBOC Case No. 10-015, May 20, 2010
2. BANAT vs. COMELEC, G.R. No. 179271, April 29, 2009
3. PARTY-LIST SYSTEM ACT, Republic Act 7941,
4. PARTY-LIST CANVASS REPORT NO. 8, May 20, 2010