Grouper Tilefish Individual Fishing Quota Five-year Review

April 2018

Introduction

- Reef Fish Amendment 29 established the Grouper and Tilefish Individual Fishing Quota program, GT- IFQ began January, 1, 2010

- MSA requirement to review program: first 5 years and then every 5-7 years after; NMFS Guidance for Conducting Reviews of Catch Share Programs (April 2017) requires specific elements be analyzed
  - Review evaluates progress in meeting goals and objectives
  - Review covers 2010-2014 time period (first 5 years of the program)
  - Initial review compares post-IFQ performance to baseline years prior to program implementation

Program Goals and Objectives

Rationalize effort and reduce overcapacity of the fishing fleet to achieve and maintain optimum yield. Anticipated benefits include:

- Increased market stability
- Elimination of quota closures
- Improved safety at sea
- Improved profitability of commercial grouper fishermen
- Reduce discards

Share Categories

Red Grouper (RG)
Red grouper[1]

Gag (GG)
Gag[1]

Deep-water grouper (DWG)

Yellowedge grouper
Snowy grouper
Warsaw grouper[2]
Speckled hind[2]
~~Misty grouper~~[3]

Tilefish (TF)

Golden tilefish
Blueline tilefish
Goldface tilefish
~~Blackline tilefish~~[3]
~~Anchor tilefish~~[3]

Other shallow-water grouper SWG

Black grouper
Yellowmouth grouper
Yellowfin grouper
Scamp[2]
~~Red hind~~[3]
~~Rock hind~~[3]

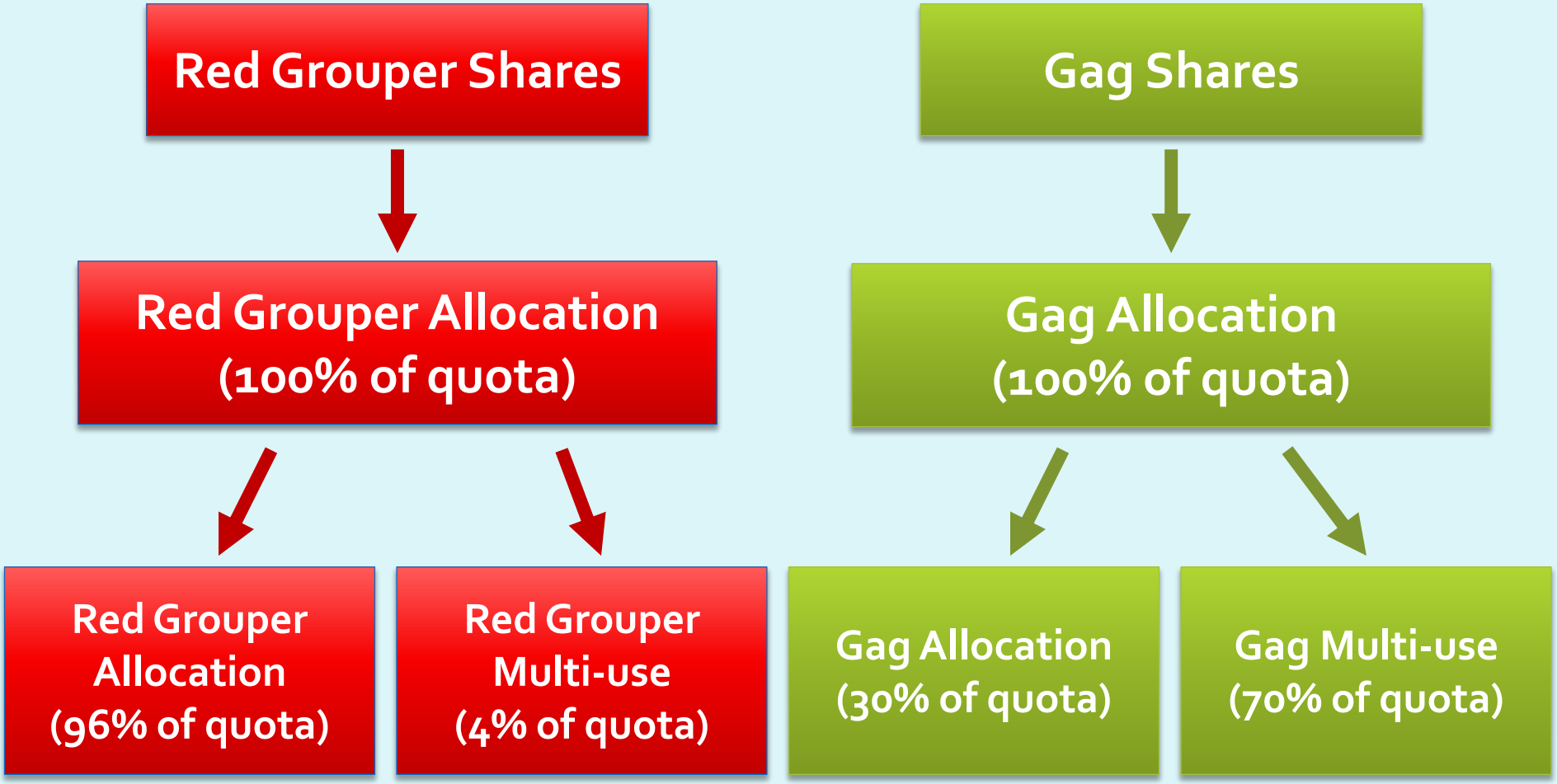
[1]Multi-use species; [2]Flexibility measure species; [3]Species crossed out were removed in 2012.

Allocation and Multi-use

- Flexibility and multi-use to reduce discards
- Multi-use (red grouper and gag)
  - On quota release, a percentage of the gag or red grouper allocation may be converted to gag multi-use or red grouper multi-use allocation
  - Multi-use allocation can be used to land either gag or red grouper.
  - Percentage based on formula using the ACL and quotas of the two species

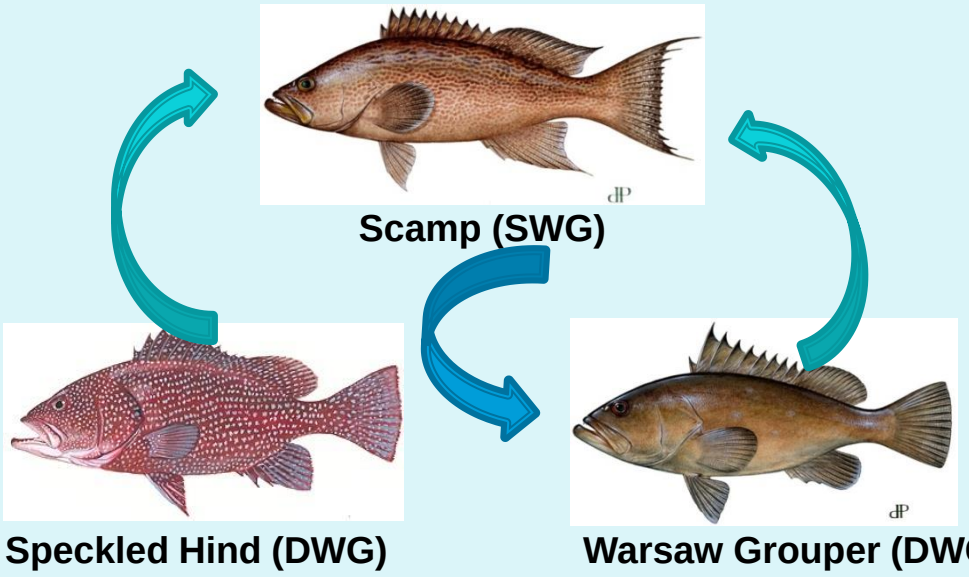
Allocation and Multi-use

$$RGM\ allocation = 100 * \frac{(Gag\ ACL - Gag\ Commercial\ Quota)}{Red\ Grouper\ Commercial\ Quota}$$



Flexibility Measures

- Multi-use and flexibility applied after primary category has been exhausted
- System controls both multi-use and flexibility measures at time of landing



Types of Account

Shareholder account

- Each account held by unique entities
- **May** hold shares and/or allocation
- Transfer shares and/or allocation
- **May** be associated with multiple vessel accounts
- **Must** be U.S. citizen or permanent resident alien

Vessel account

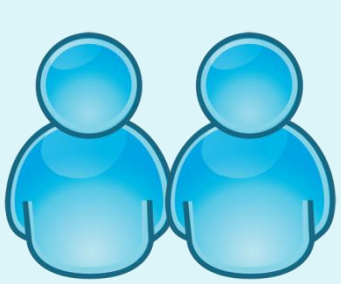
- Related to a shareholder account
- Vessel permit holder names must match shareholder account names
- Sufficient allocation must prior to landing transaction

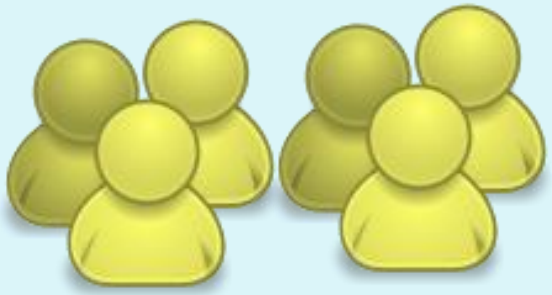
Dealer account

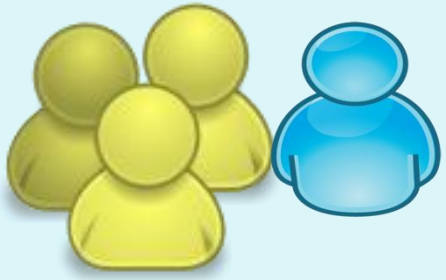
- Must be associated with a federal dealer permit
- Completes landing transactions
- Collects cost recovery fee from fishermen
- ***Can not hold shares or allocation***

Shareholder Account

- Each shareholder account is held by a unique set of entities
  - May be single individual or multiple individuals
  - May be a single business or multiple businesses
  - May be combination of individual(s) & business(es)







- Entities (e.g., people, businesses) may be related to more than one account.

Data Collection and Reporting

GT- IFQ program uses an online electronic system. The website is used to complete transactions including:

- Allocation and share transfers
- Landing notifications and landing transactions
- Registration of new landing locations
- View and pay cost recovery fees

Data gap in the collection of shares and allocation prices

Percentage of “valid” share prices

DWG	N	%	GG	N	%	RG	N	%
2010	53	33%	**2010**	107	42%	**2010**	111	42%
2011	44	46%	**2011**	47	34%	**2011**	76	45%
2012	34	44%	**2012**	68	53%	**2012**	124	61%
2013	30	57%	**2013**	52	59%	**2013**	106	73%
2014	38	61%	**2014**	78	74%	**2014**	107	74%
SWG	**N**	**%**	**TF**	**N**	**%**	**ALL**	**N**	**%**
2010	76	39%	**2010**	38	42%	**2010**	385	40%
2011	42	40%	**2011**	24	41%	**2011**	233	41%
2012	41	42%	**2012**	14	32%	**2012**	281	51%
2013	49	60%	**2013**	13	45%	**2013**	250	63%
2014	33	52%	**2014**	17	50%	**2014**	273	67%

Reasons for Share Transfers

	2013		2014	
Reason	**N**	**%**	**N**	**%**
Barter trade for allocation	-	-	7	0.97
Barter trade for shares	8	0.22	10	4.62
Gift	11	0.12	11	2.49
No comment	67	12.74	68	10.68
Package deal	22	3.62	22	3.40
Transfer to a related account	66	12.88	44	11.06
Sale to another shareholder	223	14.76	247	39.73

Percentage of “valid” allocation prices

DWG	N	%	GG	N	%	RG	N	%
2010	68	14%	**2010**	150	16%	**2010**	153	14%
2011	116	18%	**2011**	303	24%	**2011**	482	31%
2012	213	28%	**2012**	631	36%	**2012**	746	39%
2013	215	35%	**2013**	705	41%	**2013**	827	47%
2014	325	38%	**2014**	1,015	45%	**2014**	1,337	58%
SWG	**N**	**%**	**TF**	**N**	**%**	**ALL**	**N**	**%**
2010	75	12%	**2010**	35	13%	**2010**	481	14%
2011	117	21%	**2011**	62	19%	**2011**	1,080	25%
2012	279	31%	**2012**	93	24%	**2012**	1,962	34%
2013	354	39%	**2013**	88	30%	**2013**	2,188	41%
2014	443	44%	**2014**	153	36%	**2014**	3,273	48%

Reasons for Allocation Transfers

	2013		2014	
Reason	**N**	**lb**	**N**	**lb**
Barter trade for allocation	167	242,245	98	175,545
Barter trade for shares	14	62,235	19	56,675
Gift	139	147,104	126	81,314
No comment	2,276	3,363,517	3,145	5,362,720
Package deal	60	140,648	77	467,153
Transfer to a related account	1,075	3,011,559	1,043	2,651,134
Sale to another shareholder	1,549	2,422,142	2,317	3,763,044

Eligibility and Participation

- People wanting to participate must contact IFQ staff to obtain an account
- For the first five years, a commercial reef fish permit was required to obtain a shareholder account
- Dealer permit was required to obtain a dealer account.
- After five years, those without permits who want accounts must submit an application with all relevant information completed (e.g., name, address, birthdate, FEIN, etc.)

Accounts With Shares

DWG	Small	Med.	Large	Total
Initial	299	169	12	480
2010	300	148	13	461
2011	275	143	13	431
2012	253	134	14	401
2013	238	131	13	382
2014	224	129	15	368

RG	Small	Med.	Large	Total
Initial	435	248	9	692
2010	421	237	7	665
2011	377	227	6	610
2012	349	212	8	569
2013	339	200	11	550
2014	327	192	11	530

GG	Small	Med.	Large	Total
Initial	415	330	3	748
2010	424	290	5	719
2011	391	263	7	661
2012	355	249	8	612
2013	342	244	9	595
2014	333	233	9	575

SWG	Small	Med.	Large	Total
Initial	467	275	10	752
2010	460	250	11	721
2011	421	242	11	674
2012	384	234	11	629
2013	364	227	13	604
2014	351	218	13	582

TF	Small	Med.	Large	Total
Initial	171	100	16	287
2010	185	85	17	287
2011	164	79	17	260
2012	155	76	15	246
2013	144	72	16	232
2014	143	69	15	227

All share categories	
Initial	**766**
2010	**743**
2011	**699**
2012	**665**
2013	**644**
2014	**628**

Small accounts hold < 0.05%; Medium accounts: 0.05% - 1.49999%; Large accounts: ≥ 1.5% shares

Accounts holding shares in multiple categories

Share categories	2010	2011	2012	2013	2014
1	18 (2%)	22 (3%)	34 (5%)	33 (5%)	37 (6%)
2	34 (5%)	39 (6%)	42 (6%)	48 (7%)	51 (8%)
3	258 (35%)	239 (34%)	225 (34%)	214 (33%)	206 (33%)
4	172 (23%)	176 (25%)	156 (23%)	153 (24%)	145 (23%)
5	261 (35%)	223 (32%)	208 (31%)	196 (30%)	189 (30%)
Total Accounts	**743**	**699**	**665**	**644**	**628**

Accounts acquiring shares for the first time

Year	2010	2011	2012	2013	2014
DWG	17 (9.26%)	25 (3.06%)	18 (2.21%)	13 (0.46%)	12 (2.28%)
GG	16 (4.07%)	25 (2.81%)	18 (4.62%)	21 (1.97%)	11 (1.53%)
RG	18 (2.95%)	23 (3.46%)	19 (5.81%)	20 (5.29%)	11 (2.79%)
SWG	13 (5.09%)	25 (3.35%)	17 (2.06%)	17 (1.47%)	13 (1.15%)
TF	18 (16.22%)	13 (2.03%)	14 (0.94%)	6 (1.88%)	10 (1.48%)

Accounts with shares by Permit Status

DWG	Permit	No Permit
2010	449 (97%)	12 (3%)
2011	392 (91%)	39 (9%)
2012	359 (90%)	42 (10%)
2013	323 (85%)	59 (15%)
2014	296 (80%)	72 (20%)

GG	Permit	No Permit
2010	690 (96%)	29 (4%)
2011	578 (87%)	83 (13%)
2012	513 (84%)	99 (16%)
2013	475 (80%)	120 (20%)
2014	433 (75%)	142 (25%)

RG	Permit	No Permit
2010	641 (96%)	24 (4%)
2011	537 (88%)	73 (12%)
2012	479 (84%)	90 (16%)
2013	440 (80%)	110 (20%)
2014	402 (76%)	128 (24%)

SWG	Permit	No Permit
2010	692 (96%)	29 (4%)
2011	591 (88%)	83 (12%)
2012	527 (84%)	102 (16%)
2013	479 (79%)	125 (21%)
2014	433 (74%)	149 (26%)

TF	Permit	No Permit
2010	282 (98%)	5 (2%)
2011	238 (92%)	22 (8%)
2012	224 (91%)	22 (9%)
2013	200 (86%)	32 (14%)
2014	187 (82%)	40 (18%)

Total	Permit	No Permit
2010	714 (96%)	29 (4%)
2011	612 (88%)	87 (12%)
2012	556 (84%)	109 (16%)
2013	507 (79%)	137 (21%)
2014	465 (74%)	163 (26%)

Accounts With Allocation

DWG	N	% thru shares
2010	512	92%
2011	521	85%
2012	498	84%
2013	465	83%
2014	457	80%

GG	N	% thru shares
2010	789	94%
2011	767	90%
2012	743	87%
2013	716	83%
2014	726	80%

RG	N	% thru shares
2010	744	93%
2011	739	91%
2012	715	85%
2013	683	82%
2014	689	79%

SWG	N	% thru shares
2010	762	95%
2011	760	90%
2012	737	87%
2013	720	84%
2014	722	80%

TF	N	% thru shares
2010	299	91%
2011	309	85%
2012	292	83%
2013	282	82%
2014	279	78%

ALL	N	% thru shares
2010	**816**	**94%**
2011	**833**	**91%**
2012	**812**	**86%**
2013	**786**	**84%**
2014	**795**	**80%**

Dealers

Year	Total	Small <1% of landings	Medium 1-3% of landings	Large >3% of landings
2010	85	63 (74%)	15 (18%)	7 (8%)
2011	94	75 (80%)	12 (13%)	7 (7%)
2012	97	73 (75%)	16 (16%)	8 (8%)
2013	96	75 (78%)	11 (11%)	10 (10%)
2014	112	94 (84%)	7 (6%)	11 (10%)

Vessels

	DWG	GG	RG	SWG	TF	Program
Pre-IFQ	238	493	546	489	166	630
2010	187	415	393	322	79	452
2011	192	363	383	307	75	440
2012	206	384	398	343	97	449
2013	185	367	363	324	78	414
2014	186	376	384	353	91	434

Volume of Shares by Permit Status

DWG	Permit	No Permit
2010	99%	1%
2011	96%	4%
2012	97%	3%
2013	95%	5%
2014	93%	7%

GG	Permit	No Permit
2010	99%	1%
2011	98%	2%
2012	97%	3%
2013	94%	6%
2014	94%	6%

RG	Permit	No Permit
2010	99%	<1%
2011	98%	2%
2012	98%	2%
2013	96%	4%
2014	95%	5%

SWG	Permit	No Permit
2010	99%	<1%
2011	97%	3%
2012	96%	4%
2013	94%	6%
2014	92%	8%

TF	Permit	No Permit
2010	99%	<1%
2011	98%	2%
2012	98%	2%
2013	96%	4%
2014	95%	5%

GT-IFQ commercial quotas

DWG	Dec 31	GG	Dec 31	TF	Dec 31
2009	1,020,000	2009	1,320,000	2009	440,000
2010	1,020,000	2010	1,410,000	2010	440,000
2011	1,020,000	2011*	430,000	2011	440,000
2012*	1,127,000	2012*	567,000	2012*	582,000
2013	1,118,000	2013	708,000	2013	582,000
2014	1,110,000	2014	835,000	2014	582,000
RG	**Dec 31**	**SWG**	**Dec 31**		
2009	5,750,000	2009	410,000		
2010	5,750,000	2010	410,000		
2011*	5,230,000	2011	410,000		
2012	5,370,000	2012*	509,000		
2013	5,530,000	2013	518,000		
2014	5,630,000	2014	523,000		

Landings by Share Status

DWG	Shares	No Shares
2010	96%	4%
2011	90%	10%
2012	84%	16%
2013	62%	38%
2014	55%	45%

GG	Shares	No Shares
2010	96%	4%
2011	90%	10%
2012	83%	17%
2013	81%	19%
2014	65%	35%

RG	Shares	No Shares
2010	96%	4%
2011	92%	8%
2012	87%	13%
2013	80%	20%
2014	66%	34%

SWG	Shares	No Shares
2010	98%	2%
2011	91%	9%
2012	85%	15%
2013	79%	21%
2014	74%	26%

TF	Shares	No Shares
2010	99%	1%
2011	86%	14%
2012	78%	22%
2013	50%	50%
2014	41%	59%

Annual Landings

DWG	Landings	% Quota
2010	624,762	61%
2011	779,519	76%
2012	963,835	86%
2013	912,923	82%
2014	1,048,142	94%

GG	Landings	% Quota
2010	493,938	35%
2011	320,137	74%
2012	525,066	93%
2013	579,664	82%
2014	689,513	83%

RG	Landings	% Quota
2010	2,913,858	51%
2011	4,782,194	91%
2012	5,217,205	97%
2013	4,594,672	83%
2014	5,497,993	98%

SWG	Landings	% Quota
2010	158,234	39%
2011	186,235	45%
2012	300,367	59%
2013	307,846	59%
2014	263,251	50%

TF	Landings	% Quota
2010	249,708	57%
2011	386,134	88%
2012	451,121	78%
2013	440,091	76%
2014	517,268	89%

ALL	Landings	% Quota
2010	4,440,500	49%
2011	6,454,219	86%
2012	7,457,594	91%
2013	6,835,196	81%
2014	8,016,167	92%

Ownership Caps

- **Share cap for each category**: maximum percentage issued to the recipient of the largest shares at the time of the initial apportionment of IFQ shares.
- **Allocation cap across all categories:** the total amount of pounds that corresponds to all share caps combined

Category	Share Cap %
DWG	14.704321
GG	2.349938
RG	4.331882
SWG	7.266147
TF	12.212356

Share Transfers

DWG	N	Shares	Average
2010	161	25.8	0.16
2011	96	7.0	0.07
2012	78	9.3	0.12
2013	53	7.3	0.14
2014	62	12.6	0.20

GG	N	Shares	Average
2010	256	24.0	0.09
2011	138	18.8	0.14
2012	129	14.8	0.12
2013	88	5.5	0.06
2014	106	19.2	0.18

RG	N	Shares	Average
2010	267	24.3	0.09
2011	168	13.5	0.08
2012	202	17.2	0.08
2013	145	13.7	0.09
2014	144	14.2	0.10

SWG	N	Shares	Average
2010	195	25.6	0.13
2011	104	8.4	0.08
2012	97	6.9	0.07
2013	82	12.2	0.15
2014	63	10.6	0.17

TF	N	Shares	Average
2010	91	31.6	0.35
2011	59	9.0	0.15
2012	44	11.8	0.27
2013	29	5.5	0.19
2014	34	16.3	0.48

ALL	N	Shares	Average
2010	970	131.30	0.14
2011	565	56.62	0.10
2012	550	59.97	0.11
2013	397	44.34	0.11
2014	409	72.94	0.18

Allocation Transfers

DWG	N	LB	% quota
2010	490	1,027,477	101%
2011	632	1,447,229	142%
2012	764	1,524,618	135%
2013	608	1,762,344	158%
2014	846	2,370,757	214%

GG	N	LB	% quota
2010	945	743,266	53%
2011	1,250	332,049	77%
2012	1,745	503,899	89%
2013	1,718	621,594	88%
2014	2,232	1,236,126	148%

RG	N	LB	% quota
2010	1,065	3,217,048	56%
2011	1,550	4,260,483	81%
2012	1,906	4,736,612	88%
2013	1,752	5,579,299	101%
2014	2,317	7,187,959	128%

SWG	N	LB	% quota
2010	616	315,042	77%
2011	568	272,816	67%
2012	900	365,563	72%
2013	911	493,144	95%
2014	1,000	506,556	97%

TF	N	LB	% quota
2010	268	489,585	111%
2011	328	765,586	174%
2012	385	685,980	118%
2013	291	933,105	160%
2014	430	1,255,737	216%

ALL	N	LB	% quota
2010	3,384	5,792,418	64%
2011	4,328	7,078,163	94%
2012	5,700	7,816,672	96%
2013	5,280	9,389,486	111%
2014	6,825	12,557,135	145%

Share Prices

DWG	Average	Inflation-Adj
2010	$8.19	$8.90
2011	$11.35	$12.08
2012	$10.78	$11.27
2013	$12.58	$12.94
2014	$13.04	$13.18

GG	Average	Inflation-Adj
2010	$5.35	$5.81
2011	$24.24	$25.81
2012	$25.91	$27.09
2013	$31.41	$32.32
2014	$30.18	$30.50

RG	Average	Inflation-Adj
2010	$3.73	$4.05
2011	$6.24	$6.64
2012	$8.02	$8.38
2013	$13.16	$13.54
2014	$13.06	$13.20

SWG	Average	Inflation-Adj
2010	$6.91	$7.51
2011	$9.93	$10.57
2012	$7.80	$8.15
2013	$8.30	$8.54
2014	$7.36	$7.44

TF	Average	Inflation-Adj
2010	$3.11	$3.38
2011	$5.77	$6.14
2012	$8.22	$8.59
2013	$8.44	$8.68
2014	$8.75	$8.84

Allocation Prices

DWG	Average	Inflation-Adj
2010	$1.32	$1.43
2011	$1.36	$1.45
2012	$1.19	$1.24
2013	$1.14	$1.18
2014	$1.11	$1.13

GG	Average	Inflation-Adj
2010	$1.18	$1.28
2011	$1.74	$1.85
2012	$2.27	$2.38
2013	$2.40	$2.47
2014	$2.04	$2.06

RG	Average	Inflation-Adj
2010	$0.92	$1.00
2011	$0.54	$0.58
2012	$0.79	$0.82
2013	$0.97	$1.00
2014	$0.97	$0.98

SWG	Average	Inflation-Adj
2010	$1.15	$1.25
2011	$1.25	$1.33
2012	$1.15	$1.20
2013	$0.83	$0.86
2014	$0.73	$0.74

TF	Average	Inflation-Adj
2010	$0.65	$0.70
2011	$0.67	$0.71
2012	$0.66	$0.69
2013	$0.67	$0.69
2014	$0.72	$0.73

Ex-vessel Prices

DWG	Average	Inflation-Adj
2010	$3.61	$3.92
2011	$3.80	$4.05
2012	$4.06	$4.24
2013	$4.30	$4.42
2014	$4.44	$4.49

GG	Average	Inflation-Adj
2010	$4.27	$4.64
2011	$4.59	$4.89
2012	$4.69	$4.90
2013	$4.90	$5.04
2014	$4.83	$4.88

RG	Average	Inflation-Adj
2010	$3.05	$3.31
2011	$3.15	$3.35
2012	$3.21	$3.36
2013	$3.54	$3.64
2014	$3.77	$3.81

SWG	Average	Inflation-Adj
2010	$4.06	$4.41
2011	$4.14	$4.41
2012	$4.33	$4.53
2013	$4.48	$4.61
2014	$4.50	$4.55

TF	Average	Inflation-Adj
2010	$2.07	$2.25
2011	$2.31	$2.46
2012	$2.27	$2.37
2013	$2.58	$2.65
2014	$2.61	$2.64

Percentage Landed

DWG	% Quota
2010	61%
2011	76%
2012	86%
2013	82%
2014	94%

GG	% Quota
2010	35%
2011	74%
2012	93%
2013	82%
2014	83%

RG	% Quota
2010	51%
2011	91%
2012	97%
2013	83%
2014	98%

SWG	% Quota
2010	39%
2011	45%
2012	59%
2013	59%
2014	50%

TF	% Quota
2010	57%
2011	88%
2012	78%
2013	76%
2014	89%

ALL	% Quota
2010	49%
2011	86%
2012	91%
2013	81%
2014	92%

Discard ratio for red grouper (by gear and region)

Red Grouper	Vertical Lines	Long Lines	FL Peninsula	Other Gulf
2007	0.75	1.45	1.07	0.63
2008	0.81	1.17	0.95	0.38
2009	0.83	1.15	1.06	1.12
2007-09 Average	**0.80**	**1.26**	**1.03**	**0.71**
2010	0.93	1.18	1.09	0.64
2011	0.64	0.89	0.86	0.40
2012	0.44	0.88	0.64	0.13
2013	0.42	0.50	0.52	0.09
2014	0.25	0.55	0.49	0.02
2010-14 Average	**0.54**	**0.80**	**0.72**	**0.26**

Discard ratio for gag grouper (by gear and region)

Gag Grouper	Vertical Lines	Long Lines	FL Peninsula	Other Gulf
2007	0.63	0.03	0.51	0.22
2008	0.34	0.00	0.49	0.10
2009	1.45	0.08	0.86	0.28
2007-09 Average	**0.81**	**0.04**	**0.62**	**0.20**
2010	1.45	0.04	0.61	0.10
2011	1.13	2.16	1.67	1.05
2012	0.47	0.44	0.62	0.12
2013	0.23	0.52	0.49	0.14
2014	0.15	0.05	0.13	0.03
2010-14 Average	**0.69**	**0.64**	**0.70**	**0.29**

Red grouper and gag multi-use

Red grouper (RGM) and gag (GGM)

Year	GGM	RGM
2010	8%	4%
2011	8%	NA
2012	8%	NA
2013	70%	NA
2014	47%	NA

Red grouper and gag multi-use landings (% of allocation)

Year	RGM		GGM	
	Red Grouper	Gag	Red Grouper	Gag
2010	73%	27%	28%	72%
2011	NA	NA	14%	86%
2012	NA	NA	6%	94%
2013	NA	NA	1%	99%
2014	NA	NA	35%	65%

Monitoring and Enforcement

Number of enforcement cases resulting in seizure of fish

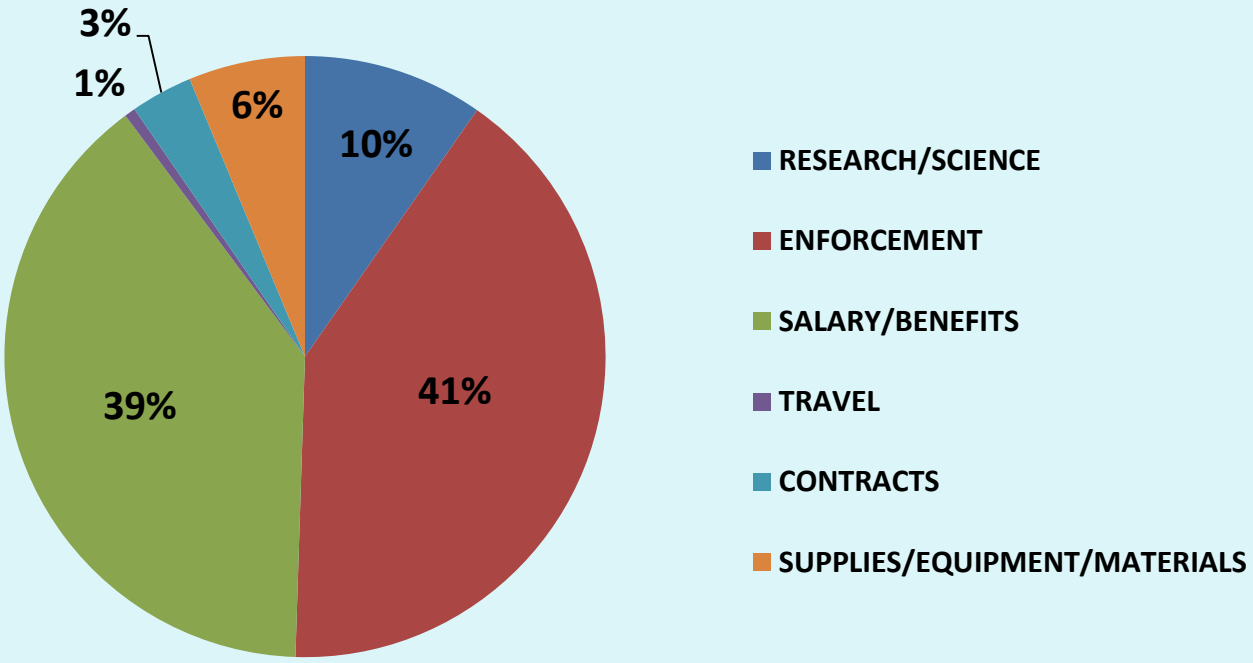
Year	IFQ Cases	GT-IFQ Cases	Total Pounds
2010	9	2	3,011
2011	10	7	19,059
2012	6	4	4,893
2013	6	3	4,255
2014	4	3	4,501
Total	35	19	35,719

Law enforcement is considering summary settlements for IFQ violations

- Transport violations
- Pre-landing notifications
- Insufficient allocation
- Offloads
- Timely landing transactions

Administration and cost recovery

Aggregated GT-IFQ program expenses, 2010-2014



- 2010-2014: Cost recovery fees fully funded program expenses (Initial IFQ program set-up costs excluded)

IFQ Programs and Ex-vessel Prices

Species included in the demand analysis:

- GOM Landings: red grouper, red snapper, other groupers, dolphin
  Imports: snapper, grouper, dolphin

Analysis used monthly data and covered the 1997-2014 period

IFQ programs (RS and GT) had no significant influence on GOM ex-vessel prices after controlling for other factors that influence prices.

No long-term trend in GOM prices after controlling for other factors;

Limited changes in seasonal demand associated with GOM species: demand for red snapper highest in February and March; demand for red grouper appears to be relatively low in the February-April

Market Power

Evaluate market concentration and activity (share, allocation and landings) for red snapper and grouper tilefish IFQ programs:

- **Landings:** For each share category as well as for IFQ species in aggregate, no evidence of market power was found
- **IFQ Shares:** No evidence of market power was found; current share caps are sufficient to prevent market power
- **IFQ Allocation:** No evidence of market power was found; allocation caps may not be needed to prevent market power

Safety-at-sea

Commercial fishing: second-most dangerous occupation in US

Average fatal occupational injury rate **for fishers** and related fishing workers : **80.8 deaths per 100,000 full-time equivalent** (FTE) workers; national Average is 3.3 per 100,000 FTE (BLS 2015).

RS IFQ reduced the number of fatalities by **1.25** per 100,000 FTE

GT IFQ reduced the number of fatalities by **7.0** per 100,000 FTE; perhaps in part due to overlap with the 2010 Coast Guard Authorization Act

Captains give more weight to wind speed in making their trip decision after the IFQ than they did before the IFQ. This implies that their **attitude towards risk** associated with poor weather conditions **has changed**.

Fishing Capacity and Technical Efficiency

Analyses based on a stochastic distance production function approach:

- Multi-output (5 GT share categories)
- Multi-gear (vertical lines and bottom long lines)
- Three inputs (crew, days fished, vessel length)
- Trip level data from 2005 to 2014

Fishing Capacity: Potential (maximum) harvest given current level of fixed inputs, technology and biomass

Capacity Utilization (CU): Compares observed output ($\mathbf{Y_o}$) to potential output ($\mathbf{Y_{cap}}$). $\mathbf{CU=Y_o / Y_{cap}}$ indicates the proportion of capacity that is effectively utilized. The rest is considered "**excess capacity.**"

Overcapacity: The difference between capacity output and a desirable sustainable catch level.

Fishing Capacity and Technical Efficiency

- Fleet-wide average technical efficiency scores were higher post-IFQ
- Technical efficiency gains driven by exit of less efficient vessels
- On average, GT-IFQ result in cost savings as remaining operators have more control over adjustments to input and output mix.
- GT fleet fishing capacity decreased on average 34% across all species over study period
- Positive effect of GT-IFQ on capacity utilization
- On average fishermen began taking longer but fewer trips after GT-IFQ

Attitudes and Perceptions of Grouper-Tilefish IFQ Stakeholders

Program Participants, Dealers and Processors, and Captain and Crew Surveys

Participants Survey

Level of Support for the Grouper Tilefish IFQ Program at Time of Implementation (**January 2010**) and Now

	January 2010		Current	
	Number	%	Number	%
Yes (support)	101	37.8	121	45.3
No (do not support)	117	43.8	107	40.1
Undecided	32	12	39	14.6
Not Applicable	17	6.37		
TOTAL	267	100	267	100

Participants Survey

Current Satisfaction with the Grouper Tilefish IFQ Program

	Number	%
Highly Unsatisfied	89	*33.2*
Unsatisfied	41	*15.3*
Neutral	**22**	***8.21***
Satisfied	54	*20.2*
Highly Satisfied	51	*19*
N/A	11	*4.1*
Total	268	*100*

Participants Survey

	Strongly Disagree	Disagree	**Neutral**	Agree	Strongly Agree	No Opinion
Improved the **profitability** of the G-T component of my business by **increasing ex-vessel prices**	*22.61%*	*11.49%*	***18.39%***	*19.54%*	*20.31%*	*7.66%*
Improved the **profitability** of the G-T component of my business by **reducing operating expenses**	*33.86%*	*23.62%*	***12.6%***	*11.02%*	*12.6%*	*6.3%*
More **flexible timing** for conducting commercial fishing trips	*18.53%*	*12.36%*	***10.42%***	*23.94%*	*30.89%*	*3.86%*
Reduced regulatory **discards** of G-T species	*22.78%*	*21.24%*	***17.76%***	*16.99%*	*15.83%*	*5.41%*
Reduced **incidental catch** of non-targeted species	*25.48%*	*21.62%*	***21.62%***	*13.51%*	*13.51%*	*4.25%*

Participants Survey

	Strongly Disagree	Disagree	**Neutral**	Agree	Strongly Agree	No Opinion
Reduced the loss of gear	*18.85%*	*25.38%*	***29.62%***	*9.23%*	*9.23%*	*7.69%*
Reduced derby-fishing conditions	*12.36%*	*5.02%*	***10.81%***	*26.25%*	*40.54%*	*5.02%*
Decreased crowding on fishing grounds	*13.41%*	*14.56%*	***15.33%***	*29.89%*	*21.84%*	*4.98%*
Improved safety at sea	*16.22%*	*15.44%*	***17.37%***	*18.53%*	*25.48%*	*6.95%*
Increased consolidation in the G-T sector	*6.3%*	*10.24%*	***26.38%***	*26.38%*	*19.29%*	*11.42%*
Made it harder for people to enter the G-T sector	*8.46%*	*6.92%*	***11.92%***	*28.08%*	*38.08%*	*6.54%*
Improved compliance with regulations associated with G-T species	*12.26%*	*13.79%*	***21.46%***	*25.29%*	*21.46%*	*5.75%*

If you purchased **GT-IFQ shares**, how important were the following reasons for doing so? (in percent)

	Not Important	Somewhat Important	Very Important
The asking price for the purchased shares was reasonable compared to the financial return I anticipated from fishing the additional shares.	*10.75*	*29.03*	*60.22*
The asking price for the purchased shares was reasonable compared to what I anticipate I will be able to sell the shares.	*34.78*	*31.52*	*33.7*
I believed that the additional shares would allow me to fish at a more efficient level.	*9.68*	*10.75*	*79.57*
I needed additional shares because I wanted to retain the grouper-tilefish I land as bycatch.	*39.36*	*22.34*	*38.3*
I anticipated that Total Allowable Catch (TAC) will increase after the next stock assessment	*29.67*	*31.87*	*38.46*

Participants Survey

Satisfaction with the IFQ Online System for managing share and allocation and completing landing transactions

	Number	Percent
Highly Unsatisfied	33	13.75
Unsatisfied	13	5.42
Neutral	**44**	**18.33**
Satisfied	82	34.17
Highly Satisfied	55	22.92
No Opinion	13	5.42

Participants Survey

Satisfaction with the customer service they receive when contacting NOAA Fisheries Service regarding questions about the IFQ Program,

	Number	Percent
Highly Unsatisfied	23	9.58
Unsatisfied	15	6.25
Neutral	**46**	**19.17**
Satisfied	74	30.83
Highly Satisfied	66	27.50
No Opinion	16	6.67

Participants Survey

Satisfaction with the customer service they receive when making a landing notification via phone

	Number	Percent
Highly Unsatisfied	18	7.32
Unsatisfied	14	5.69
Neutral	**51**	**20.73**
Satisfied	101	41.06
Highly Satisfied	33	13.41
No Opinion	29	11.79

Participants Survey

Satisfaction with the Enforcement of the Program

	Number	Percent
Highly Unsatisfied	25	10.16
Unsatisfied	22	8.94
Neutral	**68**	**27.64**
Satisfied	76	30.89
Highly Satisfied	37	15.04
No Opinion	18	7.32

Dealers and Processors

Dealers and Processors

Opinions on GT-IFQ Program at the Time of Implementation (January 2010) and 2014

	Pre-IFQ		Post-IFQ	
	Number	%	Number	%
Strongly Opposed	11	18	15	25
Opposed	12	20	8	13
Neutral	**9**	**15**	**7**	**11**
Supported	11	18	14	23
Strongly Supported	9	15	16	26
No Opinion	9	15	1	2
TOTAL	61	100	61	100

Dealers and Processors

Estimated Number of Employees Pre-IFQ (2009) and Post-IFQ (2014)

Number (range)	Pre-GT-IFQ (2009)	Post-GT-IFQ (2014)
1 to 10	23	21
11 to 50	10	10
Over 50	4	6

Dealers and Processors

IFQ Share Ownership

	Yes	No	Undecided
Do you or your business currently own IFQ shares?	53%	47%	N/A
Do you or your business plan to acquire shares in the future?	31%	39%	30%

Dealers and Processors

	Yes	No
Do you or your business provide allocation to vessels not owned by you?	56%	44%

Of those who answered YES:

- fishermen sell their catch to the firm with payment for allocation deducted: 68% ;
- 26% fishermen pay for allocation upfront;
- Other arrangements (for example, exchanging for red snapper)

Dealers and Processors

Use of allocation held on an annual basis (by percentage)

Purpose	Percent
Used by vessels owned by this business	38.30%
Provided to fishermen who own their own vessels with the stipulation that they sell their catch to business	42.10%
Provided to fishermen with no requirements on sales	8.40%
Sold (leased)	4.30%
Other	6.80%

Dealers and Processors

Satisfaction with Customer Service Received

	Number	Percent
Highly Unsatisfied	3	5.40%
Unsatisfied	3	5.40%
Neutral	**2**	**3.60%**
Satisfied	22	39.30%
Highly Satisfied	25	44.60%
No Opinion	1	1.80%

Dealers and Processors

Satisfaction with the Enforcement of the Program

	Number	Percent
Highly Unsatisfied	5	9.0%
Unsatisfied	6	10.9%
Neutral	**13**	**23.60%**
Satisfied	15	27.30%
Highly Satisfied	11	20.00%
No Opinion	5	9.10%

Captain and Crew

Labor Mobility

Change in Availability of Work by Vessel Role

	Increased Greatly	Increased Slightly	Stayed the Same	Decreased Slightly	Decreased Greatly	Don't Know	Total
Captain	8%	14%	**18%**	20%	38%	2%	44%
Crew	6%	13%	**28%**	12%	40%	1%	56%
Other	0%	0%	**0%**	0%	100%	0%	1%
Total	7%	13%	**23%**	15%	40%	1%	100%

Labor Mobility

Change in Ability to switch to another vessel

	Increased Greatly	Increased Slightly	Stayed the Same	Decreased Slightly	Decreased Greatly	Don't Know/ Refused	Total
Captain	5%	6%	35%	14%	35%	5%	44%
Crew	6%	11%	37%	18%	25%	2%	56%
Other	0%	0%	100%	0%	0%	0%	1%
Total	5%	9%	37%	16%	30%	4%	100%

Income

Change in Average Annual Income

	Increased Greatly	Increased Slightly	Stayed the Same	Decreased Slightly	Decreased Greatly	Don't Know	Total
Captain	22%	23%	15%	9%	28%	3%	44%
Crew	14%	25%	19%	11%	28%	2%	56%
Total	17%	12%	22%	12%	34%	2%	100%

Income

Change in stability of annual income

	Increased Greatly	Increased Slightly	Stayed the Same	Decreased Slightly	Decreased Greatly	Don't Know	Total
Captain	20%	23%	17%	6%	32%	2%	44%
Crew	5%	23%	27%	14%	30%	1%	56%
Total	11%	23%	23%	11%	31%	1%	100%

Safety

Change in Safety Perception by Vessel Role

	Increased Greatly	Increased Slightly	Stayed the Same	Decreased Slightly	Decreased Greatly	Don't Know	Total
Captain	40%	18%	38%	2%	2%	--	44%
Crew	39%	16%	37%	5%	4%	--	56%
Total	39%	17%	38%	3%	3%	--	100%

Program Goals and Objectives

Rationalize effort and reduce overcapacity of the fishing fleet to achieve and maintain optimum yield. Anticipated benefits include:

- Increased market stability
- Elimination of quota closures
- Improved safety at sea
- Improved profitability of commercial grouper fishermen
- Reduce discards

Conclusions

- GT-IFQ program has been relatively successful in meeting its objectives.
- Initial objectives did not specify quantified benchmarks and targets, e.g., “reduce overcapacity.”

Conclusions

Data Collection and Reporting

- Collection of share and allocation prices has greatly improved since the addition of transfer reasons.

Participation and Operational Changes

- Overcapacity has declined. Capacity utilization has increased and the technical efficiency of the fleet has increased

- Consolidation and efficiency gains within the bottom longline and vertical line sectors. Further consolidation is possible as fishing capacity remains large relative to the available quotas.

Conclusions

Share and Allocation Caps

- Distributions of shares and landings by share category have changed little since the IFQ programs were implemented.
- Market power does not exist in any of the markets for landings, shares, or annual allocation
- Existing share and annual allocation caps are not constraining landings.

Conclusions

Share, Allocation, and Ex Vessel Prices

- Analyses of share and allocation prices have been hindered by missing or erroneous data. The collection of accurate share and allocation prices continue to be a challenge.
- Although grouper ex-vessel prices increased during the review period, the introduction of the GT-IFQ program does not appear to have an appreciable effect on ex-vessel prices for Gulf groupers.
- The flexibility afforded by the GT-IFQ program has improved the profitability of fishing operations. Fishermen are able to reduce operating costs, thereby improving net revenues

Conclusions

Catch and Sustainability

- The GT-IFQ program has provided year-round fishing opportunities to participating commercial fishermen for all grouper and tilefish species included in the program.
- Gag (GGM) and red grouper (RGM) multi-use shares were not effective. The program could be streamlined by eliminating GGM and RGM shares.
- After the implementation of the GT-IFQ, red grouper discards and discard ratios decreased for all gear types. Due to a significant quota reduction, gag discards and discard ratios increased in 2011 but declined afterwards as the gag quota increased.

Conclusions

Safety at Sea

- The GT-IFQ program has improved the safety-at sea of participating commercial fishermen; resulted in significant decreases in the number of fatalities.

- The GT-IFQ has allowed fishermen to select more favorable weather conditions to plan fishing trips

Administration and Cost Recovery

- During the review period, collected cost recovery fees have fully funded the GT-IFQ program (including enforcement activities and salaries and benefits of staff working on the program).

SSC Motions

The SSC adopted the following motions (3/26/18):

- Based on data, descriptive analyses, and studies described in the review, we move to accept the report as a clear and concise summary of the grouper/tilefish IFQ program. We note that expected outcomes following the implementation of the IFQ are being achieved in the fishery and the grouper/tilefish IFQ program is meeting its objectives.

- The SSC recommends that in the future, the red snapper IFQ and grouper/tilefish IFQ programs be considered to be evaluated together rather than separately.

Thank you